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CALSPAN REMOTE AIR BAG DEPLOYMENT INVESTIGATION

[REDACTED] CALSPAN CASE NO. 93-7

VEHICLE - 1993 VOLVO 850 GLT

[REDACTED] LOCATION [REDACTED] OH

ACCIDENT DATE - [REDACTED], 1993

Contract No. DTNH22-93-Q-07222

Prepared for:

**U.S. Department of Transportation
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Washington, D.C. 20590**

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

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16. <i>Abstract</i> <p>This on-site investigation focused on a minor severity front-to-rear impact sequence that involved a 1993 Volvo GLT and a 1986 Volkswagen Golf. The Volvo was equipped with a Supplemental Restraint System (SRS) that consisted of dual driver and right front passenger air bags and front seat belt pyrotechnical pretensioners. The Volkswagen Golf was stopped on a two-lane roadway waiting for opposing traffic to clear before initiating a left turn into a shopping center. The Volvo was traveling behind the Volkswagen at an estimated speed of 48 km/h (30 mph). The driver of the Volvo failed to detect the stopped Volkswagen in sufficient time to successfully avoid the crash. She braked the ABS equipped vehicle prior to impact in an attempt to avoid the impending crash.</p> <p>The frontal area of the Volvo impacted the rear of the stopped Volkswagen resulting in a 12 o'clock/6 o'clock impact configuration. The Volvo's impact speed was computed by the CRASHPC program at 22 km/h (13 mph). The front bumper of the Volvo initially impacted and underrode the rear bumper of the Volkswagen. Maximum crush was 6.4 cm (2.5") on the frontal sheetmetal of the Volvo and 3.8 cm (1.5") on the right corner of the Volkswagen's rear bumper. As a result of the crash, the Volvo underwent a velocity change of 12 km/h (7 mph) which deployed the SRS.</p> <p>The 34 year old female driver of the Volvo was not wearing the manual belt system. She initiated a forward trajectory and contacted the deploying air bag which contused her chest and abraded and contused her chin. Her six year old child right front passenger was not restrained by the manual belt system. The passenger was displaced forward against the passenger side air bag module cover by the rapid pre-impact braking. As the SRS deployed, the passenger module cover flap impacted the child and thrust her vertically into the rear view mirror and map light console. As a result of the contact, she sustained fatal head injuries.</p>			
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CALSPAN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION
CALSPAN CASE NO. 93-7
VEHICLE -1993 VOLVO 850 GLT
LOCATION - [REDACTED]

SUMMARY

This on-site investigation focused on a 1993 Volvo 850 GLT, four-door sedan that was involved in a minor front-to-rear impact sequence with a 1986 Volkswagen Golf. The crash occurred on a two lane roadway at its junction with a driveway for a shopping center on [REDACTED], 1993 during daylight hours in [REDACTED]. The roadway was straight with an average positive grade of 3.5 percent which crested at the driveway junction. The asphalt road surface was dry with a posted speed limit of 56 km/h (35 mph).

The 1993 Volvo 850 GLT was equipped with a Supplemental Restraint System (SRS) that consisted of dual driver and right front passenger air bags and pyrotechnic pretensioners in the front 3-point manual belt systems. In addition to the SRS, the Volvo was equipped with four-wheel, power-assisted disc brakes with anti-lock (ABS), a four-speed automatic transmission, power windows, a tilt and telescoping steering wheel, three rear seat 3-point lap and shoulder belt systems, an integrated child restraint in the center rear position, head restraints at all five seated positions, and a Side Impact Protection System (SIPS). The Volvo was recently purchased from a local dealer and had an odometer reading of 937 km (582 miles). The vehicle was manufactured in [REDACTED] 1992 and was identified by the following V.I.N.: YVILS5500P2 (production number deleted).

The Volvo was occupied by an adult female driver and her six year old daughter who was seated in the right front position. They were en route to their residence and were traveling in an easterly direction on the two lane roadway at a police reported speed of 48 km/h (30 mph). The Volkswagen Golf was stopped in the eastbound travel lane of the roadway at a hillcrest ahead of the Volvo's path of travel. The driver of the Volkswagen was waiting for westbound traffic to clear to initiate a left turn into the shopping center. The driver of the Volkswagen estimated that he was stopped in the roadway for 10-15 seconds. During this time frame, he checked for approaching traffic in his rear view mirror and noted a red vehicle (Volvo) approaching the rear of his stopped vehicle. He redirected his attention forward, then again checked for traffic in his mirror. At this point the driver of the Volkswagen noted that the approaching vehicle was not decelerating and he braced against the steering wheel for the impending crash.

The driver of the Volvo failed to detect the stopped Volkswagen in sufficient time to avoid the crash. Immediately prior to impact, she applied a rapid braking force which compressed the front suspension of her vehicle. The Volvo was equipped with anti-lock brakes which did not deposit tire marks on the asphalt road surface.

The driver of the Volkswagen stated that his vehicle was positioned close to the centerline of the roadway and that his front wheels were turned slightly in a counterclockwise direction in preparation for the left turn. The center and left frontal areas of the Volvo impacted the right two-thirds of the rear of the Volkswagen Golf. The Volvo's impact speed was computed at 22 km/h (13 mph) by the damage and trajectory algorithm of the CRASHPC program. Resultant directions of force were 12 o'clock for the Volvo and 6 o'clock for the Volkswagen. Due to the pre-impact braking, the front bumper of the Volvo initially impacted then underrode the rear bumper of the Volkswagen. Direct contact damage on the Volvo began 18.4 cm (7.3") right of center and extended 97 cm (38") to the left front corner. As a result of the underride, there was no residual

SUMMARY (CONT'D.)

crush to the Volvo's bumper. Crush was limited to the hood face and grille area which yielded a maximum of 5.7 cm (2.3") of sheetmetal crush that was located 31.2 cm (12.3") left of center. The Volkswagen Golf sustained minor damage to the rear bumper and adjacent sheetmetal. Direct contact damage began 31.2 cm (12.3") left of center and extended 105.2 cm (41.4") to the right bumper corner. Maximum crush was 3.8 cm (1.5") at the right bumper corner. As a result of the crash, the Volvo sustained a CRASHPC estimated velocity change of 12 KPH (7 mph) which was sufficient to deploy the SRS. The Volkswagen was accelerated forward and sustained an equivalent velocity change of 17 KPH (11 mph).

The Volvo came to rest near the point of impact. The crash displaced the Volkswagen approximately 3 m (10') forward as the driver of the Volkswagen maintained brake application. The investigating police officer documented a distance of 1.5 m (5.0') that separated the final rest positions of the vehicles. Immediately following the crash, the driver of the Volkswagen unfastened his manual belt system and proceeded to the Volvo to check the condition of its occupants. He could not recall if he had assisted the driver of the Volvo in opening the left front door or if she had opened the door. The driver of the Volkswagen stated that the driver of the Volvo was fanning a smoke-like substance within the vehicle (residue from SRS deployment) and was hysterical over the condition of her daughter who came to rest on the right front floor. The driver of the Volkswagen ran to the shopping center and instructed a clerk to notify 911 of a medical emergency in front of the shopping center. He then returned to the scene and waited for emergency personnel to arrive.

The driver of the Volvo was a 34 year old female with a reported height of 152 cm (60"), and weight of 41 kg (90 lbs.). She stated to the police that she wore the manual 3-point lap and shoulder belt system; however, the evidence indicates that she was not restrained. The front seat three-point lap and shoulder belt systems were equipped with pyrotechnic pretensioners that were activated by the SRS. The pretensioners fired as the SRS deployed and spooled-up approximately 10 cm (4") of belt slack before locking the belts taut against the B-pillar. The belt webbing was abraded by the plastic trim panel that covered the B-pillar and the top-mounted retractor mechanism. If the belt system had been worn at the time of the crash, the pretensioner would have locked the belt in its approximate worn position.

The driver was probably in a normal seated position at impact with the seat track adjusted to a forward position. At the time of our inspection of the Volvo, the driver's seat (power) was found adjusted to a rear-track position with the seat back set 15° rearward of vertical. She initiated a forward trajectory in response to the 12 o'clock impact force and contacted the deploying air bag with her face and upper thoracic areas. Lipstick and makeup transfers were visible on the air bag and were located at the center position of the bag. The driver sustained an area of redness (contusion) to the upper chest and abrasions and contusions to the chin (AIS-1) that resulted from her involvement with the air bag. There were no other contact points within the vehicle from the driver.

The right front occupant of the Volvo 850 GLT was the driver's six year old daughter. She had a reported height of 112 cm (44") and weight of 23 kg (51 lbs.). The child passenger was wearing an orange jacket with a knit-type collar, blue jeans, and tennis shoes. Although her mother stated to the police that she was wearing the manual 3-point lap and shoulder belt system, our investigation determined that she was not restrained. The right front manual belt system was also equipped with a pyrotechnic pretensioner that fired at impact with the SRS. The right front belt system was in a position similar to the driver's belt, locked against the right B-pillar with the latchplate resting against the bottom edge of the trim panel slot (normal D-ring location).

SUMMARY (CONT'D.)

Based on the location and severity of the child passenger's injuries and the associated contact points within the vehicle, it was presumed that the child was in a normal seated position and rotated slightly to her right, exposing her front left side to the instrument panel. Immediately prior to impact, the driver applied a rapid braking force in an attempt to avoid the impending crash. Due to the brake induced deceleration, the child passenger moved forward from the seat and against the right instrument panel and passenger side air bag module assembly. As the child contacted the involved components, the frontal area of the Volvo impacted the rear of the stopped Volkswagen which resulted in deployment of the dual driver and passenger air bag SRS.

The child's left arm was probably folded against her left side area with her hand extended in an upward direction at impact. She was either holding a small troll doll in the left hand or the doll was positioned on top of the passenger side air bag module cover flap. As the passenger side air bag deployed, the left lower edge of the module cover flap contacted her arm as the flap began to open in an upward direction. The initial contact resulted in a 3 x 1 cm hematoma over the anterior armfold at the left elbow and crepitation of the elbow. (The medical examiner stated that he suspected a fracture of the elbow; however, he did not x-ray or open the joint to confirm the injury.) In addition to the arm contact, the module cover flap contacted the child's chest as it continued to open in an upward direction. The deploying passenger side air bag subsequently expanded across the child's chest as she was positioned against the module assembly. Due to the child's forward position, she restricted the deployment of the air bag and as a result, the bag pushed against the internal surface of the module cover flap which may have contributed to an earlier separation of the nylon tether straps that were affixed to the outboard edges of the flap and the module assembly as designed by the manufacturer. The loading force of the module cover flap and the deploying air bag against the child's chest resulted in focally hemorrhagic and ecchymotic areas of the lungs, a 0.7 cm hematoma of the interatrial septum over the right atrium, and a 1.7 cm rupture of the capsule of the spleen. Due to the child's age and her pliant rib cage, there were no fractures of the ribs or sternum.

The separation of the module cover tether straps allowed the flap to open beyond its normal limits and with greater force as demonstrated by the heavy contact pattern of the module cover on the windshield. The left lower edge of the flap probably contacted the knitted collar of the jacket and subsequently impacted the inferior aspect of the child's chin. The flap continued up into the left anterior aspect of her chin and into the lips and left side of the mouth area. As a result, she sustained a 10 x 5 cm abrasion to the anterior and inferior aspects of the chin, a 4 x 1 cm hemorrhagic area to the upper and lower lips, and a 3 x 1.5 cm abrasion at the left lateral aspect of the mouth. A large orange fabric transfer was noted to the left lower horizontal face of the module cover flap and to the lower edge of the flap at the parting seam. The transfer was located 3.3 cm (1.3") inboard of the left edge of the flap and extended 7.1 cm (2.8") to the right and extended 5 cm (2") vertically from the seam onto the face of the flap.

The upward rotation of the module cover flap and contact with the inferior aspect of the occupant's chin, in combination with deployment of the passenger side air bag, accelerated the child in both a vertical and rearward direction. As the module cover flap disengaged from the child occupant, it continued to pivot in an upward direction and impacted the laminated windshield with the right corner area. The contact cracked the glass and bowed the windshield 5.4 cm (2.1") in an outward direction. Black vinyl transfers from the corner of the module cover flap were embedded into the cracked glass 48 cm (19") right of the vehicle's centerline. The mid area of the module cover flap compressed the troll doll into the windshield. The glass abraded the front side of the doll

SUMMARY (CONT'D.)

and its purple hair was embedded into the cracked windshield 41 cm (16") right of center and 18 cm (7") above the top of the instrument panel.

As the child was thrust upward and rearward, the dorsal aspect of her left hand swiped across the cracked windshield depositing faint tissue transfers in a diagonal pattern. The contact resulted in multiple hematomas and lacerations to the dorsum of the hand. The superior aspect of the child's head impacted the right side of the rear view mirror and compressed the mirror into the overhead map light area. The impact fractured the mirror glass and separated the mirror from its windshield header mount. The subsequent contact from the mirror into the map light area resulted in multiple black plastic transfers to the lenses and switches of the lights. As a result of the contact, the child sustained a 5 cm diameter hematoma over the superior sagittal suture line of the scalp, a 0.7 cm hematoma of the right frontal scalp, fine, diffuse, acute subarachnoid hemorrhage (not further specified), acute contusions of the superior aspect of the left and right temporal lobes of the brain anteriorly, uncal and cerebular tonsillar herniation, acute contusion of the inferior aspect of the pons on the right, and pronounced brain swellings (1,545 grams). The medical examiner stated that the average brain weight of a child is approximately 1100 grams. The mirror frame and fractured mirror glass produced a 4 x 2 cm hematoma at the lateral aspect of the left eye, 4 x 2 cm hematoma to the left lateral tip of the nose, and 2 and 3 cm lacerations to the lateral tip of the nose.

The child passenger rebounded from the vertical loading of the mirror contact and fell to rest on the right front floor area of the Volvo. Her right ear probably impacted the leading edge of the seat cushion which resulted in hematomas to the upper and mid aspects of the right ear auricle. She came to rest with her head on the seat cushion and her body slumped onto the floor with the deflated passenger side air bag extended over her body.

A passing motorist, who is a nurse and an emergency medical technician, noted the windshield damage to the Volvo and immediately stopped to offer assistance. She approached the right side of the vehicle and observed the child on the right front floor. The motorist motioned for the driver to unlock the right front door so she could gain access to the child. As she reached the child, she found the passenger unconscious. The nurse detected a pulse and checked for breathing from the passenger's nose and mouth. She held the child's head in alignment to maintain an airway and waited for rescue personnel to arrive on-scene.

Paramedics from a local professional fire station responded to the scene and arrived within minutes of the crash. The fire station was located approximately 1.2 km (0.8 miles) from the crash scene. The paramedics immediately cut the child's jacket from her in the vehicle and placed a cervical collar to maintain head and neck alignment. The paramedic who removed her jacket observed that the child was bleeding from the nose and mouth prior to arrival and that the blood flow had stopped. The passenger was placed on a backboard and removed from the vehicle to an ambulance. While en route to a local hospital, the child lost her pulse and heartbeat. She was revived in the ambulance prior to arrival at the hospital. The total length of time from time of call to arrival at the hospital was 18 minutes.

At the hospital, the child was stabilized before being transported by helicopter to a children's hospital in [REDACTED]. She was maintained on life support until [REDACTED] morning, [REDACTED] when she expired at 0944 hours, approximately 41 hours after the crash.

ACCIDENT SCHEMATIC
CALSPAN CASE NO. 93-07

Shopping center
driveway

VEHICLES:

- #1 - 1993 Volvo 850 GLT,
4 dr. sedan
- #2 - 1986 Volkswagen Golf,
4 dr. hatchback

Paved gravel
shoulder

Paved and
dirt shoulder



Scale 1" = 20'

+1.7%

+3.5%

S

Parking lot
driveway

CALSPAN REMOTE AIR BAG DEPLOYMENT INVESTIGATION

CALSPAN CASE NO. 93-7

VEHICLE - 1993 VOLVO 850 GLT

LOCATION - [REDACTED]

CRASH DATA

Location: Urban two-lane roadway

City/Township: [REDACTED]

Area/Type: Urban/Commercial

Crash Date/Time: [REDACTED], 1993, daylight hours

Investigating Police Agency: [REDACTED] Police Department

Crash Type: Car/Car, front-to-rear impact configuration

Air Bag Vehicle Driver - Minor (AIS-1)

Occupant Injury Severity: Right Front Passenger - Fatal (AIS-5)

AMBIENCE

Viewing Conditions: Daylight

Weather: Clear

Precipitation: None

Road Surface: Dry

HIGHWAY

Type: Urban collector

Number of Lanes: 2


Width: 7.2 m (23'7")

Surface: Asphalt, good condition

Median: None

Edge: North edge-2.0 m (6.5') paved and gravel shoulder
South edge-1.8 m (6') paved and dirt shoulder

HIGHWAY (CONT'D.)

Vertical Alignment: 

Horizontal Alignment: Straight

Estimated Coefficient of Friction: .75

Traffic Density: Moderate

TRAFFIC CONTROLS

Signals: None

Signs: No pertinent signs

Markings: Yellow full barrier centerlines, solid white edgelines, advance railroad crossing warning pavement markings in the westbound travel lane

Speed Limit: 50 km/h (35 mph)

VEHICLES

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Description:	1993 Volvo 850 GLT, 4 dr. sedan	1986 Volkswagen Golf Diesel, 4 dr. hatchback
V.I.N.:	YVILS5500P2 (production number deleted)	IVWEGO177GV (production number deleted)
Color:	Red	Silver
Odometer:	937 km (582 miles)	258,761 km (160,721 miles)
Engine:	Transverse mounted 2.4 liter, 20 valve 5 cylinder	4 cylinder diesel
Transmission:	4-speed automatic overdrive, console mounted transmission selector lever	5-speed manual, floor mounted transmission selector lever
Steering:	Power assisted rack-and-pinion	Manual rack-and-pinion
Brakes:	Power assisted 4-wheel disc with anti-lock (ABS)	Power assisted front disc, rear drum

VEHICLES (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Padding:	Upper, mid, and lower instrument panels, soft edged steering wheel rim and air bag module covers, door panels, door armrests, head restraints, headliner, sunvisors, soft edged transmission shift lever and emergency brake lever	Upper and mid instrument panel, soft edged steering wheel rim and spoke covering, sunvisors, door panels, adjustable head restraints
Manual Restraints:	3-point lap and shoulder belt systems in the five designated seated positions. Integral child seat (forward facing) incorporated into the center rear seat back	3-point lap and shoulder belts in the left front and right front seated positions, 3 rear seat lap belts
Automatic Restraints:	Supplemental Restraint System (SRS) that consisted of a dual driver and right front passenger air bags and pyrotechnical pretensioners in the front outboard 3-point belt systems. The SRS deployed as a result of the front-to-rear impact sequence	None
Additional Occupant Protection:	Side Impact Protection System (SIPS) consisted of a pair of lateral tubes in the base of the front seats which connected the B-pillars to a reinforced center floor box between the seats and raised sills at the base of the B- and C-pillars to distribute crash forces and absorb energy by controlled crush	None
Defects:	None	None
Tow Status:	Towed due to SRS deployment and occupant injury	Not required, driven from scene

VEHICLE DAMAGE

Air Bag Vehicle

Exterior:

The frontal area of the Volvo 850 GLT sustained minor damage from its impact sequence with the rear of vehicle #2. The upper face of the front bumper fascia initially contacted the rear bumper of vehicle #2 then subsequently underrode the Volkswagen's bumper. As a result, the Volvo sustained crush damage to the hood face, grille, and left headlamp area.

Direct contact damage began 18.5 cm (7.3") right of center and extended 97 cm (38") to the left front corner. Contact damage on the bumper fascia consisted of abrasions and black rubber/plastic transfers and a vertically orientated tear at the mid portion of the fascia. There was no residual crush to the bumper system. The Volvo was not equipped with a conventional hydraulic bumper energy absorbing system. The leading ends of the front frame rails consisted of a deformable convoluted energy absorption system with two V-shaped convolutions at each rail. The outboard convolutions were 7.0 cm (2.8") in width while the inboard convolutions were 2.5 cm (1.0"). These vertically orientated convolutions were not compressed or displaced laterally and appeared to be in factory-original condition.

Vehicle #2

The rear area of the Volkswagen Golf sustained minor damage as a result of being struck by the frontal area of the Volvo. The driver/owner reported that the right rear bumper area was previously damaged from an extremely minor backing collision against a tree. He reported that the previous damage had not been repaired.

The Volvo impacted the right two-thirds of the rear area of vehicle #2. Direct contact damage began 31.1 cm (12.3") left of center and extended 105.2 cm 41.4" to the right corner. The contact damage consisted of abrasions to the bumper face and deformation to the sheetmetal panels above and below bumper level. The impact displaced the bumper forward which resulted in a full width induced and direct contact damage length of 150.6 cm (59.3"). Crush values at bumper level were as follows:

$C_1 = 3.8 \text{ cm (1.5")}$,
 $C_2 = 2.9 \text{ cm (1.1")}$,
 $C_3 = 2.3 \text{ cm (0.9")}$,
 $C_4 = 1.3 \text{ cm (0.5")}$,
 $C_5 = 0.8 \text{ cm (0.3")}$,
 $C_6 = 0 \text{ cm}$.

The bumper crush resulted from contact by both the bumper and grille areas of the Volvo as it impacted and underrode the Volkswagen. The Volvo's bumper subsequently contacted and dented the sheetmetal valence below the Volkswagen's bumper. The grille area also contacted the sheetmetal above the bumper. Both areas sustained minimal crush of approximately 3.3 cm (1.3") in depth.

VEHICLE DAMAGE (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Exterior (Cont'd.):	<p>The damage to the hood face, grille, and headlamp components resulted from contact with the rear bumper of the Volkswagen Golf. The sheetmetal deformation began at the right hood face, directly inboard of the right headlamp assembly. The direct contact damage extended laterally 109.2 cm (43.0") to the left turn signal lens. Although no structural components were involved, the sheetmetal crush values at grille level were as follows:</p> <p>$C_1 = 3.8 \text{ cm (1.5")}$, $C_2 = 5.8 \text{ cm (2.3")}$, $C_3 = 6.4 \text{ cm (2.5")}$, $C_4 = 1.3 \text{ cm (0.5")}$, $C_5 = 0 \text{ cm}$, $C_6 = 0 \text{ cm}$.</p> <p>Components damaged by the minor severity crash included the front bumper fascia, license plate, hood and hood face, grille, left headlamp and turn signal assemblies, the left front fender, and a superficial crack of the plastic cowl that extends across the upper radiator support panel.</p>	<p>Damaged components included the rear bumper, right bumper EAD, the sheetmetal above and below the bumper, and slight induced damage to the right rear quarter panel.</p>
CDC:	12-FYEW-1	06-BZEW-1
Repair Cost:	\$6,000 (estimated, inclusive of SRS replacement)	\$750 (estimated)

VEHICLE DAMAGE (CONT'D.)

Interior, Air Bag Vehicle:

The interior of the Volvo 850 GLT sustained extensive damage that resulted from deployment of the SRS and subsequent occupant contact. The driver side air bag deployed in a normal sequence from the module contained in the center of the steering assembly. The module cover flaps opened in an H-configuration to allow the bag to inflate. There were two makeup transfers at the center area of the deployed bag. A lipstick transfer was located 3.8 - 6.4 cm (1.5 - 2.5") above the horizontal centerline of the bag and extended 0.8 - 3.3 cm (0.3 - 1.3") to the left of the vertical centerline. Located immediately below the lipstick transfer was a skin-tone makeup transfer that began 3.8 cm (1.5") left of center and extended to 2.5 cm (1.0") right of the vertical centerline and 0 - 3.8 cm (0 - 1.5") above the horizontal centerline. In addition to the makeup transfers, several blood smears were observed to the backside of the bag, located between the peripheral seam and the upper vent ports. These smears probably occurred post-crash as the driver attended to the right front passenger and subsequent contact with the bag as she exited the vehicle. The driver did not have open or bleeding wounds.

The passenger side air bag deployed from the module located in the upper right instrument panel area. The formed module cover flap consisted of both the top (horizontal) surface of the instrument panel and the upper vertical surface of the panel. The flap was hinged at the top and opened in an upward direction toward the windshield. Woven nylon tether straps were vulcanized to the sides of the flap 4.6 cm (1.8") above the bottom edge. These 1.9 cm (0.8") wide straps were attached to the outboard surfaces of the instrument panel and limited the vertical travel of the passenger module flap. Both straps separated approximately 1.3 cm (0.5") above the instrument panel and as a result, the passenger flap contacted and cracked the laminated windshield. Black vinyl fragments were embedded into the cracked windshield 49.5 cm (19.5") right of center and 15.2 cm (6.0") above the upper instrument panel. In addition to cracking the glass, the cover flap bowed the windshield 5.3 cm (2.1") in an outward direction.

Both front seat manual 3-point lap and shoulder belt systems were equipped with pyrotechnical pretensioners that were activated with deployment of the SRS. The pretensioners spool-up belt slack to provide an occupant with a snug belt for maximum protection during a crash. Both front seat belts were not worn by the occupants; therefore, the belts were retracted against the B-pillars as the pretensioners fired. The belt webbing was spooled-up by the pretensioners and, as a result, the webbings were pulled taut against the pillars and were

VEHICLE DAMAGE (CONT'D.)

Interior, Air Bag Vehicle (Cont'd.):

locked in their pre-crash, retracted (stowed) positions.

The right front child passenger contacted and damaged multiple interior components during her pre-crash, crash, and post-crash trajectories. Prior to impact, the unrestrained child occupant was thrust forward due to the suspected pre-impact braking by the driver of the Volvo. As the SRS deployed, the passenger side air bag module cover flap contacted the neck area of the jacket that the child was wearing. A large orange fabric transfer was noted to the left forward edge of the flap. It began at the parting seam and extended 5 cm (2") vertically onto the face of the flap. The transfer began 3.3 cm (1.3") inboard of the left edge of the flap and extended 7.0 cm (2.8") to the right. A purple "Troll Doll" was either held by the child occupant or was positioned on top of the passenger air bag module cover flap. The module cover flap accelerated the doll into the windshield and was subsequently compressed into the glass by the flap. Purple hair from the doll was embedded into the cracked windshield 41 cm (16") right of center and 18" (7") above the instrument panel. The anterior aspect of the doll was heavily abraded from the glass contact.

The child's left hand subsequently contacted the cracked windshield which produced a faint diagonally orientated tissue transfer to the glass. The transfer was 19.1 cm (7.5") in length and 5.8 cm (2.3") in width and was located mid-glass 18 - 25 cm (7 - 10") right of center. The superior aspect of the child's head impacted the bottom edge of the rearview mirror and compressed the mirror vertically into the header-mounted map lights. As a result of the head contact, the bottom edge of the plastic frame for the rearview mirror was cracked. In addition, the mirror glass was cracked and the assembly was separated from the stem-type mount. There were abrasions and black plastic transfers to the map light unit from the contact with the mirror. Immediately below the left map light, an oily type smudge was noted to the windshield 3.8 cm (1.5") left of center which extended 5 cm (2") below the header. There were two small lacerations to the fabric headliner that probably resulted from flying rearview mirror or windshield glass. The lacerations were located above the driver's seated area and were 31.8 cm (12.5") and 34.3 cm (13.5") left of center and 29.2 cm (11.5") and 38.1 cm (15.0") rearward of the windshield header.

Additional scuffs were noted to the transmission shifter, the upper right surface of the mid instrument panel, and to the left side of the right front seat back. These superficial scuffs did not result in permanent damage to the interior components.

SUPPLEMENTAL RESTRAINT SYSTEM

The Volvo 850 GLT was equipped with a Supplemental Restraint System (SRS) that deployed as a result of the minor front to rear impact sequence. The SRS consisted of dual driver and right front passenger side air bags and pyrotechnical pretensioners in the front 3-point lap and shoulder belt systems. The pretensioners were mounted to an elongated reel which allows the belt to retract to a vertical height that is proportionate to the occupant, thus resulting in automatic height adjustment for the shoulder belt webbing. At the time of our inspection of the vehicle, both manual 3-point belt systems were found fully retracted against the respective B-pillars. The pyrotechnic pretensioners fired and spooled-up the belt slack which pulled the webbing taut against the pillars.

The driver side air bag module was contained within the lower portion of the four-spoke steering wheel and was mounted flush to the wheel rim. The module cover opened at the designated tear points in a typical H-configuration. The upper module cover flap measured 19.1 cm (7.5") horizontally x 7.6 cm (3") vertically and was approximately 7.9 mm (5/16") in thickness. The internal vertical edges of the upper flap were molded in a V-configuration and were approximately 15.9 mm (5/8") in thickness. The upper flap was opened fully against the upper steering wheel rim and the corners were deformed inward from rim contact. The lower module cover flap was 19.1 cm (7.5") horizontally x 6.4 cm (2.5") vertically and was similar in thickness to the upper flap. This flap had opened to an angle of approximately 75-80° and was 5 cm (2") above the lower steering wheel rim. Both module cover flaps were reinforced with a 1 mm sheetmetal plate that was molded within the vinyl flaps, thus forming a rigid type flap.

The driver side air bag deployed from the module assembly and was not damaged during the crash. The bag was constructed of a woven heavy-duty polyamide fabric with a neoprene liner. In its deflated state, the driver side bag measured approximately 64.8 cm (25.5") in diameter. In its fully inflated state, the volume of the driver's side bag was approximately 65 liters. The bag was sewn with an external peripheral seam with one row of stitching. There was approximately 9.5 mm (3/8") of fabric extending outboard of the stitching and the edge of the bag was frayed around the entire circumference. The bag was tethered by four internal tether straps that were bonded to the center area of the bag. There were four 2.5 cm (1.0") diameter venting ports located on the back side of the bag (opposite of the driver) at the 10 and 2 o'clock and 4 and 8 o'clock positions. The vent ports were centered 8.6 cm (3.4") outboard of the steel backer plate for the inflator assembly. There was a grayish generant residue on the module cover flaps directly forward of the vent ports. The driver side air bag module was not removed from the steering assembly. There was an embossed alpha-numerical identification number on the interior surface of the lower module cover flap which was as follows:

VOLVO [REDACTED]
GERMANY [REDACTED]

As previously stated, there was no damage to the air bag fabric. Several makeup transfers were noted to the face of the bag (area exposed to the driver) and a blood smear on the back side of the bag, located between the upper vent ports.

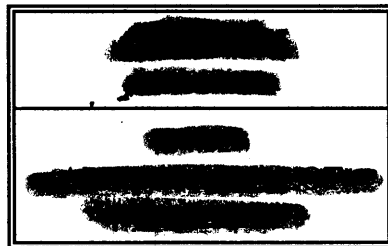
The right front passenger side air bag module assembly was located in the right upper instrument panel. The module was concealed by a curved cover flap that extended on both the vertical and horizontal surfaces of the instrument panel. The cover flap measured 32.8 cm (12.9") horizontally, 9.9 cm (3.9") along the vertical surface, and 7.6 cm (3") in depth across the top surface of the instrument panel. The cover flap opened at the designated lower and side parting seams and was hinged at the upper horizontal surface, parallel to the base of the windshield, thus

SUPPLEMENTAL RESTRAINT SYSTEM (CONT'D.)

allowing the flap to open in an upward direction. The cover flap was molded of a vinyl type material with a pliable internal flap which contained the replacement instructions for the passenger air bag module assembly. The module assembly was identified by a series of labels that were affixed to the internal surface of the exterior cover flap. A bar coded label identified the module as follows:

[REDACTED]
DATE [REDACTED] /92
[REDACTED]

Additional labels were as follows:



The outboard edges of the passenger module cover flap were tethered to the sides of the module assembly by woven nylon type webbings that were similar in appearance to seat belts. The straps were 19 mm (.75") in width and were approximately 16.5 cm (6.5") in length. The straps were designed to restrict the vertical movement of the flap. Both straps completely separated approximately 1.3 cm (0.5") above the attachment point of the module assembly. The separated ends were frayed in an irregular pattern with long strands of fabric at the module side of the separation. The straps were bonded approximately 4.5 cm (1.8") above the bottom edge of the flap.

The passenger side air bag was constructed of a woven heavy-duty polyamide fabric and was sewn with internal seams located at the side surfaces of the bag. The bag fabric was beige in color on the top and bottom surfaces and was white on the side surfaces. There was no liner or vent ports for the passenger bag which apparently exhausted the gases through the bag fabric. The Volvo service manual specified an inflated volume of approximately 150 liters for the passenger side air bag. In its deflated state, the passenger air bag extended approximately 100.3 cm (39.5") rearward from the module to the crash adjusted position of the right front seat back and head restraint. The passenger bag was identified by a bar coded label that was affixed to the bottom of the bag adjacent to the module assembly. The label read as follows:

[REDACTED]
SKU # [REDACTED]

There was a small 9.5 mm (0.4") diagonally orientated tear at the top surface of the passenger bag. The tear was located 28 cm (11") from the module and 12.7 cm (5.0") inboard of the lower right seam. The edges of the tear appeared to be discolored (darkened), similar to exposure to heat or the hot gases venting through the tear. There was no other damage or occupant contact evidence to the passenger air bag.

SUPPLEMENTAL RESTRAINT SYSTEM (CONT'D.)

The SRS was monitored by a diagnostic system and faults were indicated by the illumination of a lamp in the left lower quadrant of the instrument cluster. During the inspection of the vehicle, the ignition switch was turned to the run position and the SRS indicator lamp glowed constant indicating that the system was inoperable (SRS deployed).

A warning label was affixed to the left lower B-pillar that identified the vehicle as SRS equipped. The label also advised the owner to have the system serviced and inspected on [REDACTED].

VEHICLE VELOCITY ESTIMATES

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Travel Speed:	48 km/h (30 mph)	0 km/h (0 mph)
Impact Speed:	22 km/h (13 mph)	0 km/h (0 mph)
Total ΔV :	12 km/h (7 mph)	17 km/h (11 mph)
Longitudinal ΔV :	-12 km/h (-7 mph)	17 km/h (11 mph)
Lateral ΔV :	0 KPH (0 mph)	0 KPH (0 mph)
Energy Absorption:	7890 joules (5819 ft.lbs.)	145000 joules (10693 ft.lbs.)

The impact speeds and velocity changes (ΔV s) were computed by the damage and trajectory algorithm of the CRASHPC program. A copy of the output is included as Appendix B of this report.

COLLISION SEQUENCE

Pre-Crash: This crash occurred on an east/west, two lane asphalt roadway during daylight hours in moderate to heavy traffic. In the vicinity of the crash scene, the road surface was straight with a positive grade to the east that crested at a hill located near the impending point of impact. A three lane driveway for a shopping center intersected the west roadedge at the hillcrest. There were no traffic controls to regulate traffic in or out of the shopping center. The posted speed limit was 56 km/h (35 mph).

The driver of the 1993 Volvo GLT was transporting her six year old daughter to their residence and was traveling in an easterly direction at a police reported speed of 48 km/h (30 mph). The driver had negotiated a moderate right curve and traversed an at-grade highway/railroad crossing and began to ascend the positive grade toward the driveway junction.

COLLISION SEQUENCE (CONT'D.)

Pre-Crash (Cont'd.):

The driver of vehicle #2 was stopped in the eastbound lane at the driveway junction, waiting for westbound traffic to clear to initiate a left turn into the shopping center. The Volkswagen was positioned close to the centerlines of the roadway and the front wheels were turned slightly to the left. The driver of vehicle #2 stated that he had his left turn signal on and his right foot on the brake to prevent the vehicle from rolling backwards. While stopped, the driver of the Volkswagen checked his rearview mirror for approaching eastbound traffic. He observed the approaching Volvo ascending the grade and redirected his attention forward. The driver stated that he checked his rearview mirror a second time and began to track the Volvo as he determined the vehicle was not going to stop. He applied a heavy braking force and braced for the impending impact. The driver estimated that he had been stopped for 10-15 seconds prior to impact.

The driver of the Volvo was apparently inattentive or was distracted and failed to detect the stopped Volkswagen in sufficient time to avoid the crash. She probably applied a rapid braking force immediately prior to impact. The Volvo was equipped with four-wheel anti-lock (ABS) brakes and therefore did not leave evidence (i.e., skid marks) of pre-impact braking. (The probability of rapid pre-impact braking was determined from the underride impact configuration and the forward displacement of the unrestrained right front child occupant.)

Crash:

The pre-impact braking by the driver of the Volvo compressed the front suspension of the vehicle as it impacted the rear of the stopped Volkswagen. The impact speed for the Volvo was computed at 22 km/h (13 mph) by the damage and trajectory algorithm of the CRASHPC program. The upper surface of the center and left front bumper facia initially contacted the rear bumper of the Volkswagen. This contact was supported by abrasions to the upper surface of the Volvo's bumper facia. The bumper subsequently underrode the rear bumper of the Volkswagen and contacted the sheetmetal valence below the bumper. The hood face and grille area of the Volvo impacted and crushed against the bumper of the Volkswagen. The Volkswagen's bumper was displaced forward by the impact as the vehicles crushed to maximum engagement.

The front to rear impact sequence resulted in a 12 o'clock impact force to the Volvo and a 6 o'clock impact force to the struck Volkswagen. Although crush was minimal, and involved only sheetmetal components of the Volvo, velocity changes were computed by the damage algorithm of the CRASHPC program at 12 km/h (7 mph) for the Volvo and 17 km/h (11 mph) for the Volkswagen Golf. (A copy of the CRASHPC output is included as Appendix B of this report.) As a result of the impact-induced deceleration, the Volvo's Supplemental Restraint System deployed.

COLLISION SEQUENCE (CONT'D.)

Crash
(Cont'd.):

There was no physical evidence at the crash scene to support the impact and final rest positions of the vehicles. The driver of the Volkswagen stated that his vehicle was displaced forward by the crash and that he reapplied the brakes to prevent his vehicle from crossing the centerline and into the westbound travel lane. He stopped his vehicle approximately 3 m (10') east of the point of impact. The Volvo probably came to rest several feet east of the point of impact. The investigating police officer documented a distance of 1.5 m (5.0') that separated the final rest positions of the involved vehicles.

Post-Crash:

Final Rest -

The Volkswagen Golf came to rest straddling the centerlines of the roadway, facing in an easterly direction. The Volvo came to rest within the eastbound travel lane facing in an easterly direction.

Driver
Activities -

Both drivers remained in their respective vehicles immediately following the crash. The driver of the Volkswagen stated that he remained in his vehicle for approximately 10 seconds in an attempt to gather his thoughts regarding the event. He looked in his rearview mirror to check the status of the driver of the Volvo. He did not detect activity within the Volvo and immediately exited his vehicle to check on the condition of its driver.

He could not recall if he had opened the left front door of the Volvo or if its driver had opened the door. As he approached the vehicle, the Volvo driver was fanning a smoke-like substance away from her face. The smoke was related to deployment of the Volvo's SRS; however, the driver of the Volvo initially thought the vehicle was on fire. The Volkswagen driver did observe at this point that the driver of the Volvo was not wearing the manual seat belt system.

The driver of the Volkswagen asked the Volvo driver if she was alright and she responded by stating "my daughter." He then observed the child passenger lying on the right front floor with her head resting on the right front seat cushion. She was partially covered by the deflated passenger side air bag. The Volkswagen driver then ran to the right front door of the Volvo in an attempt to offer assistance to the child passenger. Traffic was passing the Volvo on the right shoulder; therefore, the Volkswagen driver could not open the door. He instructed the Volvo driver to remain at the scene while he would attempt to call for professional assistance.

The driver of the Volkswagen ran to a store in the shopping center and called 911 for police and emergency rescue assistance. He then returned to the scene of the crash.

COLLISION SEQUENCE (CONT'D.)

Witness Activities -	There were no known witnesses to the crash; however, a passing motorist observed the damage to the windshield of the Volvo and stopped to offer assistance. This woman was a nurse and an emergency medical technician (EMT). As she approached the left front door of the Volvo, she observed the driver reach toward the right front seat with her arms extended. At that point, the witness noted the child passenger at rest on the right front floor with her head on the seat cushion. The driver then exited the Volvo. The witness proceeded to the right side of the vehicle and found the right front door locked. She asked the driver to open the door so the witness could attend to the child passenger. She checked for pulse and breathing and held the child's head in alignment and waited for the paramedics to arrive on-scene.
Rescue Activities -	The professional fire department was located approximately 0.8 km (0.5 miles) west of the crash scene. The rescue squad responded to the call and arrived within one minute of the call. Paramedics immediately evaluated the child and began to cut her jacket to better treat and assess her condition. She was placed on a backboard and immediately transported by ambulance to a local hospital. Upon arrival at the hospital, the child's condition was stabilized and she was transferred by helicopter to a [REDACTED] Hospital.
Police Activities -	Numerous officers from the [REDACTED] Police Department responded to the call and assisted with the investigation, scene documentation, and traffic control. The officers completed their investigation and cleared the scene nearly two hours after receiving the call.
Scene Clearance -	<p>The Volvo sustained minor non-disabling damage; however, due to the traumatic injuries to the child occupant, and transport of the driver, the vehicle was towed from the scene.</p> <p>The Volkswagen Golf sustained minor damage and was driven from the scene.</p> <p>The police impounded the Volvo and stored it in a secure indoor garage pending this investigation.</p>

HUMAN FACTORS/OCCUPANT DATA

	<u>Air Bag Vehicle</u>
Driver:	34 year old female
Height:	152 cm (60")
Weight:	41 kg (90 lbs.)
Manual Restraint System Usage:	None
Usage Source:	Vehicle inspection
Eyewear:	Unknown
Vehicle Familiarity:	Unknown
Route Familiarity:	Daily
Trip Plan:	En route to residence
Mode of Transport from Scene:	Ambulance, with daughter
Type of Medical Treatment:	No treatment

DRIVER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Mid chest contusion	Minor (490402.14)	Driver's side air bag
Semicircular contusion with abrasion of the anterior and inferior chin	Minor (290202.18, 290404.18)	Driver's side air bag

DRIVER KINEMATICS

The petite female driver of the Volvo 850 GLT was in a presumed forward driving position. At the time of our inspection of the Volvo, the driver's seat track was apparently readjusted from its crash position and was 1.3 cm (0.5") forward of the full rearward position. The seat back was adjusted to an angle of 75°, 15° rearward of vertical. The power seat track had approximately 23 cm (9") of fore and aft adjustment. The Volvo was also equipped with a tilt and telescopic steering assembly that was found adjusted to the full forward position. The driver was not wearing the manual 3-point lap and shoulder belt system. The driver's side belt system was equipped with a pyrotechnic pretensioner that fired with the SRS. The pretensioner spooled-up the slack of the stowed belt and locked the system against the left B-pillar. In addition, the driver of the Volkswagen noted that the Volvo driver was not wearing the belt restraint as he approached the Volvo immediately following the crash.

At impact with the stopped Volkswagen, the SRS was activated, deploying both the driver and passenger side air bags. The driver was in a presumed forward driving position and initiated a forward trajectory in response to the frontal impact sequence and contacted the deploying driver's side air bag with her face and thoracic areas. The driver's mouth and chin areas contacted the center of the air bag. Lipstick and makeup transfers extended 6.4 cm (2.5") above to 3.8 cm (1.5") below the horizontal centerline of the bag. As a result of the contact, the driver sustained a semicircular area of abrasion and contusion to the anterior and inferior aspects of the chin. She also sustained an area of redness (contusion) to the mid-chest area from thoracic contact with the bag.

Although the driver was not wearing the manual belt system, the deployed air bag prevented her from direct contact with the steering assembly, thus preventing her from further injury. There were no other contact points noted within the vehicle from the driver. She remained upright and probably rebounded into the left front seat back, where she came to rest.

PASSENGER DATA

Age/Sex:	6 year old female
Height:	112 cm (44")
Weight:	23 kg (51 lbs.)
Seated Position:	Right front
Manual Restraint System Usage:	None
Usage Source:	Vehicle inspection
Mode of Transport From Scene:	Ambulance to local hospital then transferred by helicopter to a [REDACTED] Hospital
Type of Medical Treatment:	Admitted to [REDACTED] Hospital where she expired 41 hours following the crash

PASSENGER INJURIES

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Acute contusion of the inferior aspect of the pons on the right	Critical (140204.58)	Vertical loading of the rear view mirror and overhead map light
Uncal and cerebular tonsillar herniation	Critical (140202.58)	Vertical loading of the rear view mirror and map light
Acute contusions of the superior aspect of the left and right temporal lobes, anteriorly	Severe (140624.43)	Vertical loading of the rear view mirror and map light
Pronounced brain swelling, 1,545 grams	Severe (140664.49)	Rear view mirror and map light
Fine, diffuse, acute subarachnoid hemorrhage	Serious (140684.39)	Rear view mirror and map light
Focally hemorrhagic and ecchymotic areas of the lungs, 6 x 1.5 cm ecchymotic area over the posterior aspect of the right lung, 6 x 3 cm ecchymotic area over the upper lobe of the left lung, 4 x 1 cm ecchymotic area over the lower lobe of the left lung	Severe (441410.43)	Passenger side air bag
0.7 cm hematoma of the interatrial septum over the right atrium, 50 cc of blood was drawn from the right atrium	Severe (441004.34)	Passenger side air bag
1.7 cm rupture of the capsule of the spleen, 200 cc of free blood in the abdomen at the phragmatic area in the left side	Moderate (544222.22)	Passenger side air bag
0.7 cm hematoma of the right frontal scalp	Minor (190402.15)	Rear view mirror

PASSENGER INJURIES
(CONT'D.)

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
5 cm diameter hematoma over the superior sagittal suture line of the scalp	Minor (190402.16)	Rear view mirror
1 cm hematoma in the upper portion of the right ear auricle	Minor (290402.11)	Rebound contact into right front seat cushion
1 x 1 cm hematoma at the middle third of the right ear auricle	Minor (290402.11)	Rebound contact into right front seat cushion
4 x 2 cm hematoma at the lateral aspect of the left eye	Minor (297402.12)	Fractured rear view mirror)
4 x 2 cm hematoma to the left lateral tip of the nose	Minor (290402.14)	Fractured rear view mirror
2 and 3 cm lacerations to the left lateral tip of the nose	Minor (290602.14)	Fractured rear view mirror
3 x 1.5 cm abrasion at the left lateral aspect of the mouth	Minor (290202.18)	Passenger side air bag module cover flap
4 x 1 cm hemorrhage to the upper and lower lips	Minor (290402.18)	Passenger side air bag module cover flap
10 x 5 cm abrasion to the anterior and inferior aspects of the chin	Minor (290202.18)	Passenger side air bag module cover flap
3 x 1 cm hematoma over the anterior armfold at the left elbow	Minor (790402.12)	Passenger side air bag module cover flap
Multiple hematomas of the dorsum of the left hand	Minor (790402.12)	Cracked windshield
Multiple lacerations (glass cuts) to the dorsum of the left hand	Minor (790600.12)	Cracked windshield
Swollen left arm with crepitation of the left elbow	Not coded, not a confirmed injury	Passenger side air bag module cover flap

PASSENGER KINEMATICS

The six-year-old child passenger was seated on the right front bucket seat of the Volvo. The seat was found adjusted to a mid track position with the seatback slightly reclined from a vertical position. The child was wearing an orange jacket that reportedly had a knit type collar, a blouse, blue jeans, and tennis shoes. She was not wearing the manual 3-point lap and shoulder belt system. The driver of the Volvo (passenger's mother) initially stated to the police that the child passenger was restrained by the manual belt system. However, evidence within the vehicle clearly supported the lack of belt usage. The right front belt system was equipped with a pyrotechnical pretensioner that spooled-up the belt slack as the SRS deployed. At impact the shoulder belt webbing was retracted against the right B-pillar; therefore, as the pretensioner fired, it locked the shoulder belt webbing taut against the B-pillar. In addition, the trajectory and subsequent interior contact points by the child passenger were typical of an unrestrained occupant.

Based on the location and severity of the child passenger's injuries and the associated contact points within the vehicle, it was presumed that the child was in a normal seated position and rotated slightly to her right, exposing her front left side to the instrument panel. Immediately prior to impact, the driver applied a rapid braking force in an attempt to avoid the impending crash. Due to the brake induced deceleration, the child passenger moved forward from the seat and against the right instrument panel and passenger side air bag module assembly. As the child contacted the involved components, the frontal area of the Volvo impacted the rear of the stopped Volkswagen which resulted in deployment of the dual driver and passenger air bag SRS.

The child's left arm was probably folded against her left side area with her hand extended in an upward direction at impact. She was either holding a small troll doll in the left hand or the doll was positioned on top of the passenger side air bag module cover flap. As the passenger side air bag deployed, the left lower edge of the module cover flap contacted her arm as the flap began to open in an upward direction. The initial contact resulted in a 3 x 1 cm hematoma over the anterior armfold at the left elbow and crepitation of the elbow. (The medical examiner stated that he suspected a fracture of the elbow; however, he did not x-ray or open the joint to confirm the injury.) In addition to the arm contact, the module cover flap contacted the child's chest as it continued to open in an upward direction. The deploying passenger side air bag subsequently expanded across the child's chest as she was positioned against the module assembly. Due to the child's forward position, she restricted the deployment of the air bag and as a result, the bag pushed against the internal surface of the module cover flap which resulted in complete separation of the nylon tether straps that were affixed to the outboard edges of the flap and the module assembly. The loading force of the module cover flap and the deploying air bag against the child's chest resulted in focally hemorrhagic and ecchymotic areas of the lungs, a 0.7 cm hematoma of the interatrial septum over the right atrium, and a 1.7 cm rupture of the capsule of the spleen. Due to the child's age and her pliant rib cage, there were no fractures of the ribs or sternum.

The separation of the module cover tether straps allowed the flap to open beyond its normal limits and with greater force as the bag was expanding against it. The left lower edge of the flap probably contacted the knitted collar of the jacket and subsequently impacted the inferior aspect of the child's chin. The flap continued up into the left anterior aspect of her chin and into the lips and left side of the mouth area. As a result, she sustained a 10 x 5 cm abrasion to the anterior and inferior aspects of the chin, a 4 x 1 cm hemorrhagic area to the upper and lower lips, and a 3 x 1.5 cm abrasion at the left lateral aspect of the mouth. A large orange fabric transfer was noted to the left lower horizontal face of the module cover flap and to the lower edge of the flap at the parting

PASSENGER KINEMATICS (CONT'D.)

seam. The transfer was located 3.3 cm (1.3") inboard of the left edge of the flap and extended 7.1 cm (2.8") to the right and extended 5 cm (2") vertically from the seam onto the face of the flap.

The upward rotation of the module cover flap and contact with the inferior aspect of the occupant's chin, in combination with deployment of the passenger side air bag, accelerated the child in both a vertical and rearward direction. As the module cover flap disengaged from the child occupant, it continued to pivot in an upward direction and impacted the laminated windshield with the right corner area. The contact cracked the glass and bowed the windshield 5.4 cm (2.1") in an outward direction. Black vinyl transfers from the corner of the module cover flap were embedded into the cracked glass 48 cm (19") right of the vehicle's centerline. The mid area of the module cover flap compressed the troll doll into the windshield. The glass abraded the front side of the doll and its purple hair was embedded into the cracked windshield 41 cm (16") right of center and 18 cm (7") above the top of the instrument panel.

As the child was thrust upward and rearward, the dorsal aspect of her left hand swiped across the cracked windshield depositing faint tissue transfers in a diagonal pattern. The contact resulted in multiple hematomas and lacerations to the dorsum of the hand. The superior aspect of the child's head impacted the right side of the rear view mirror and compressed the mirror into the overhead map light area. The impact fractured the mirror glass and separated the mirror from its windshield header mount. The subsequent contact from the mirror into the map light area resulted in multiple black plastic transfers to the lenses and switches of the lights. As a result of the contact, the child sustained a 5 cm diameter hematoma over the superior sagittal suture line of the scalp, a 0.7 cm hematoma of the right frontal scalp, fine, diffuse, acute subarachnoid hemorrhage, acute contusions of the superior aspect of the left and right temporal lobes of the brain anteriorly, uncal and cerebular tonsillar herniation, acute contusion of the inferior aspect of the pons on the right, and pronounced brain swellings (1,545 grams). The mirror frame and fractured mirror glass produced a 4 x 2 cm hematoma at the lateral aspect of the left eye, 4 x 2 cm hematoma to the left lateral tip of the nose, and 2 and 3 cm lacerations to the lateral tip of the nose.

The child passenger rebounded from the vertical loading of the mirror contact and fell to rest on the right front floor area of the Volvo. Her right ear probably impacted the leading edge of the seat cushion which resulted in hematomas to the upper and mid aspects of the right ear auricle. She came to rest with her head on the seat cushion and her body slumped onto the floor with the deflated passenger side air bag extended over her body.

VEHICLE #2

Driver:	39 year old male
Height:	188 cm (74")
Weight:	79 kg (175 lbs.)
Manual Restraint System Usage:	3-point lap and shoulder belt system
Usage Source:	Vehicle inspection, driver interviews
Eyewear:	Prescription eyeglasses, remained on face
Vehicle Familiarity:	7 years
Route Familiarity:	Frequently
Trip Plan:	En route to shopping center then return to residence
Mode of Transport From Scene:	N/A, drove vehicle from scene to residence
Type of Medical Treatment:	No treatment, not injured

DRIVER #2 INJURIES

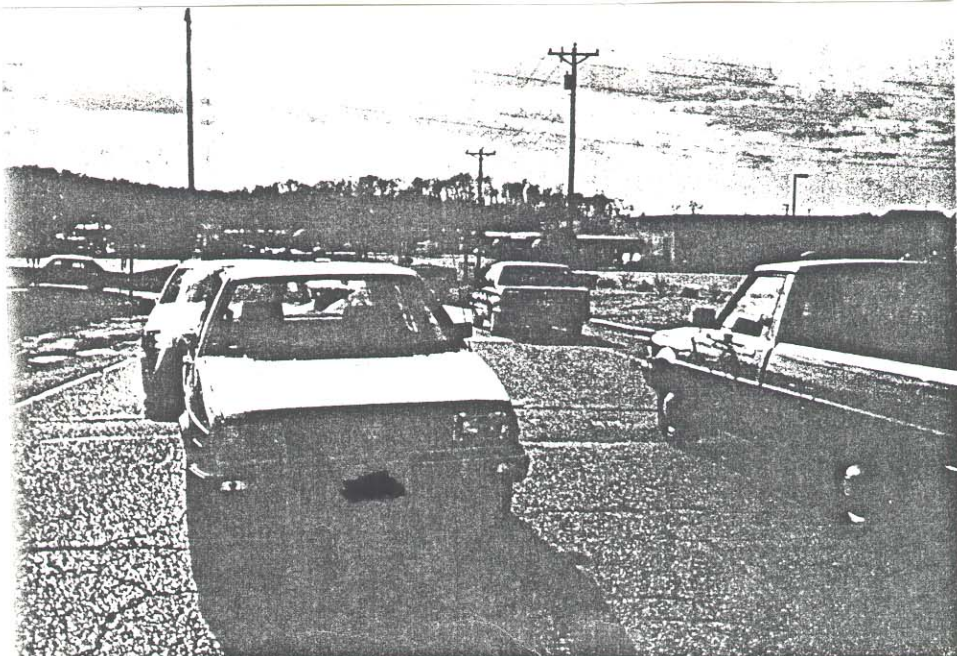
<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Not injured	N/A	N/A

ON-SCENE POLICE PHOTOGRAPHS

1



2



Final Rest Positions of the Involved Vehicles

SELECTED PRINTS

3



4



Pre-Crash Trajectory of the Volvo 850 GLT

5



Point of Impact

6



Perpendicular View of the Crash Scene and Driveway

7



Lookback View of the Crash Scene

8



Frontal Damage to the Volvo 850 GLT

9



Close-up View of the Frontal Damage

10



Left Front Three-Quarter View

11



12



Perpendicular Views Showing the Extent of Crush to the Volvo

13

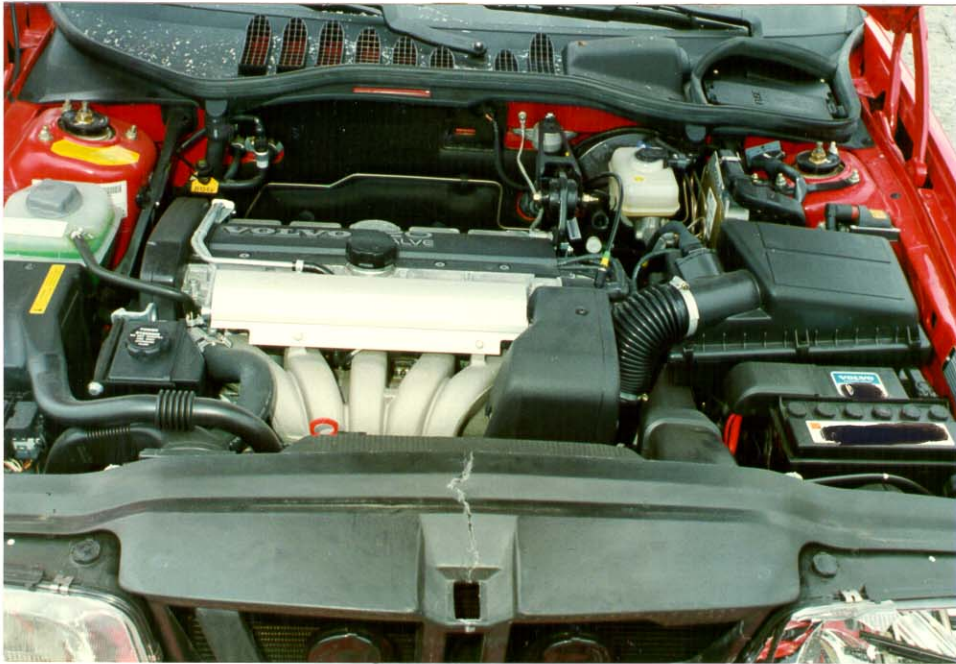


14



Rear Three-Quarter Views

15



Engine Compartment of the Volvo

16



External View of the Extended Sill for the Side Impact Protection System (SIPS)

17



Overall Interior View of the Deployed Dual Air Bags and Subsequent Occupant Contact Points

18



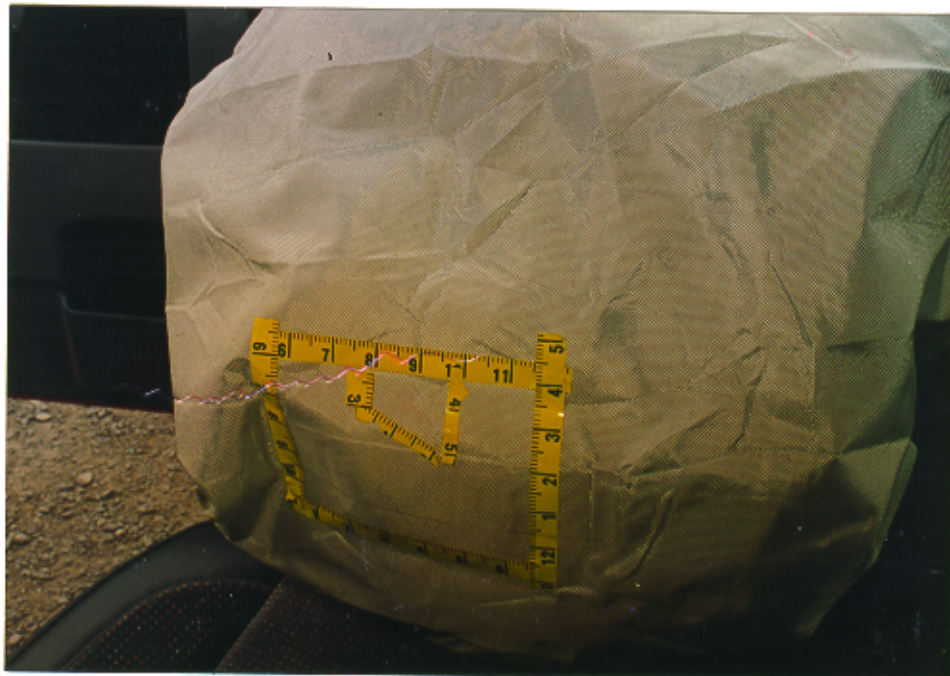
Deployed Driver's Side Air Bag

19



Perpendicular View of the Deployed Driver's Side Air Bag
and Fully Retracted and Locked Manual 3-Point Belt System

20



Driver's Facial Contact to the Center Area of the Deployed Air Bag

21



Close-up View of Driver's Facial Contact, Lipstick and Makeup Transfers

22



Upper Air Bag Module Cover Flap with Sheetmetal Reinforcement
and Upper Venting Ports at the 10 and 2 O'clock Positions

23



Driver's Side Latchplate

24



Pyrotechnic Pretensioner for the Driver's Side Manual Belt System

25



Pretensioner Cable and Automatic Belt Height Adjustment Spool Retractor

26



Perpendicular View of the Child Passenger's Seated Area

27



Trajectory and Subsequent Contact Points of the Child Passenger

28



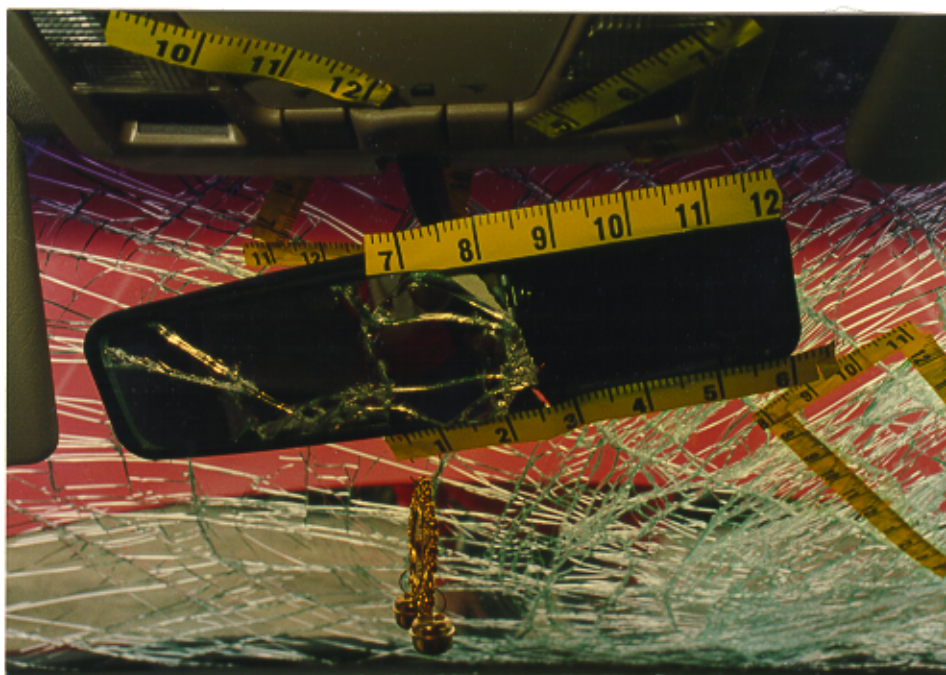
Right Front Passenger Air Bag Module Cover Flap and Deployed Air Bag

29



Fabric Transfer Extends 2" Vertically Onto Face of Module Cover Flap

30



Child Occupant was Displaced Vertically by the Module Cover Flap,
Resulting in Head Contact to the Rear View Mirror/Map Lights

31



Passenger Side Air Bag

32



Orange Fabric Transfer on the Leading Edge of the Passenger Air Bag Module Cover Flap
that Resulted from Contact with the Child Passenger's Jacket

33

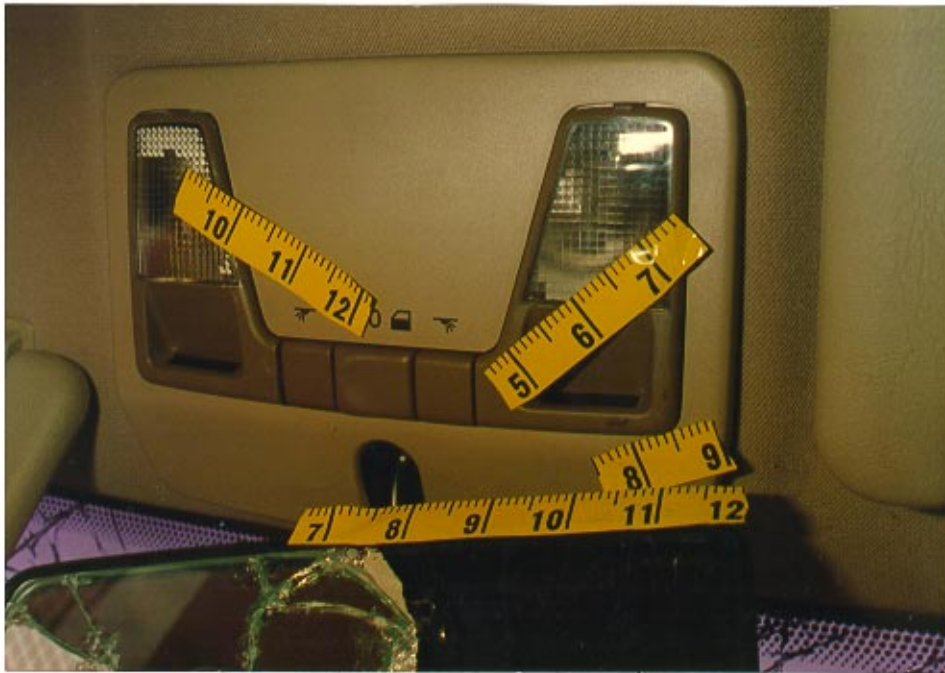


34



Mirror Damage that Resulted from the Child Occupant's Head Impact

35



Mirror was Displaced into the Map Light Console on the Roof and Disengaged from the Mount

36



Right Corner of the Passenger Air Bag Module Cover Flap Impacted and Cracked the Windshield; Right Tether (Limiter) Strap for the Module Cover Flap Separated

37



Left Module Cover Tether Strap Separated

38



Windshield Impact Area from Passenger Air Bag Module Cover Flap,
Vinyl Transfers Embedded into Broken Glass

39



6.4 cm (2.5") of Outward Bowing to Windshield from Module Cover Flap Contact

40



Damage to Windshield that Resulted from Module Cover Flap Contact

41

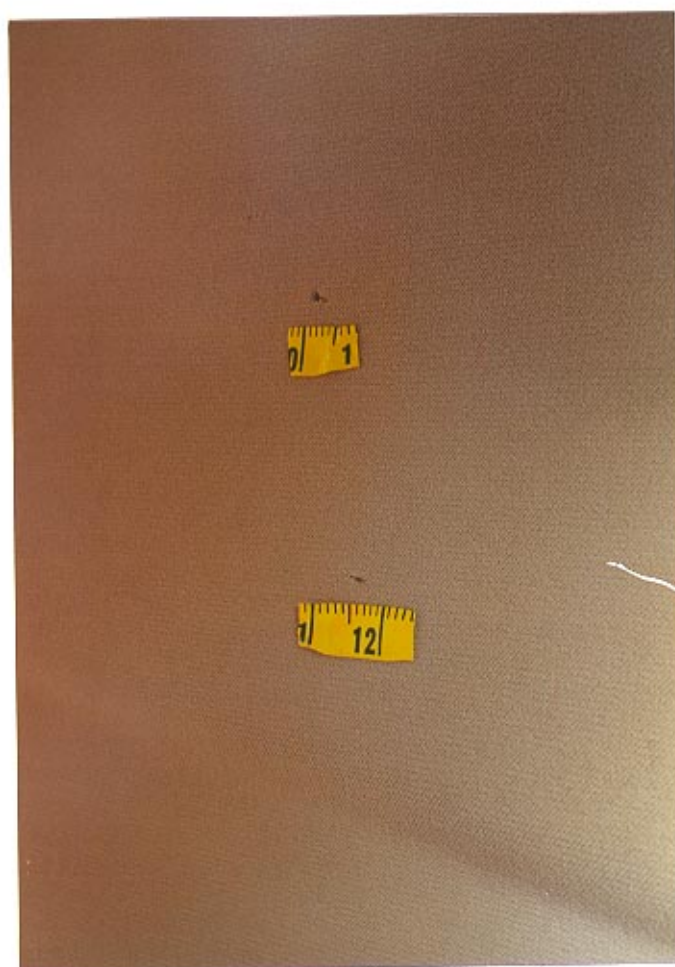


Right Front Passenger's Manual Belt Locked Against the B-pillar

42

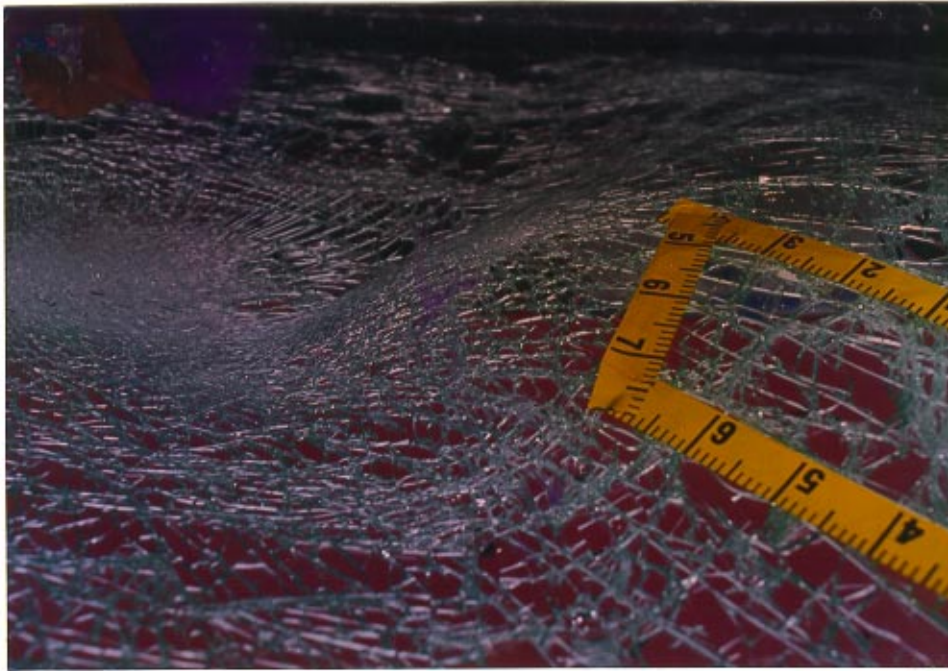


Bag Deployment of the SRS Pretensioner



Lacerations to the Headliner from Flying Rear View Mirror Glass

45



Troll Doll Contact To Windshield;
Doll was Sandwiched Between the Glass and the Passenger Air Bag Module Cover Flap

46



Glass Abrasion to the Face of the Troll Doll

47



Child Passenger Came to Rest on Right Front Floor
with Head Resting on Right Front Seat Cushion

48



Rear Damage to Vehicle #2

49



Right Rear Three-Quarter View

50



51



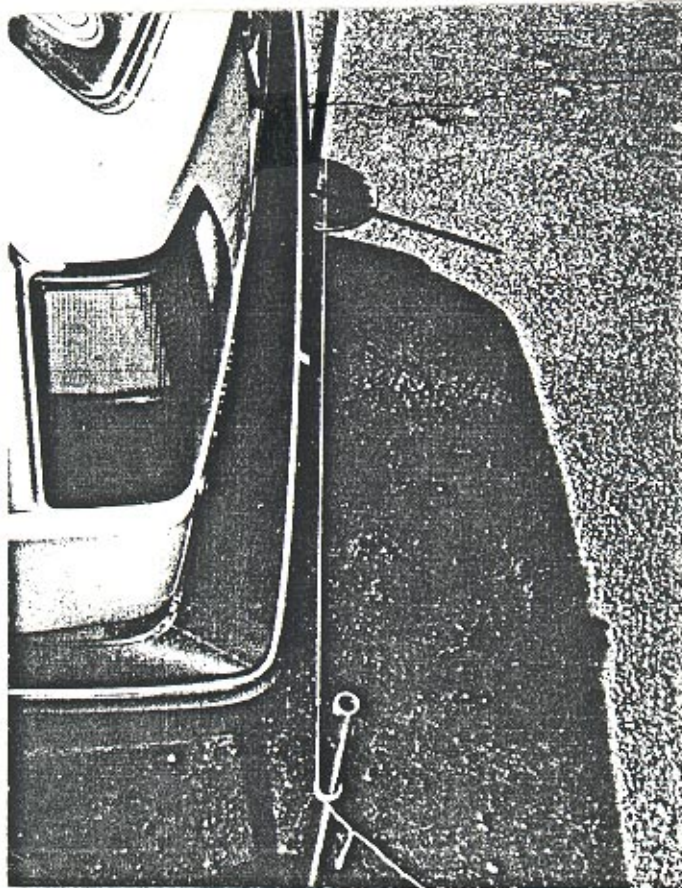
Direct Contact Damage Begins 12.25" Left of Center
and Extends 41.4" to the Right Rear Bumper Corner

52



Left Rear Three-Quarter View

53



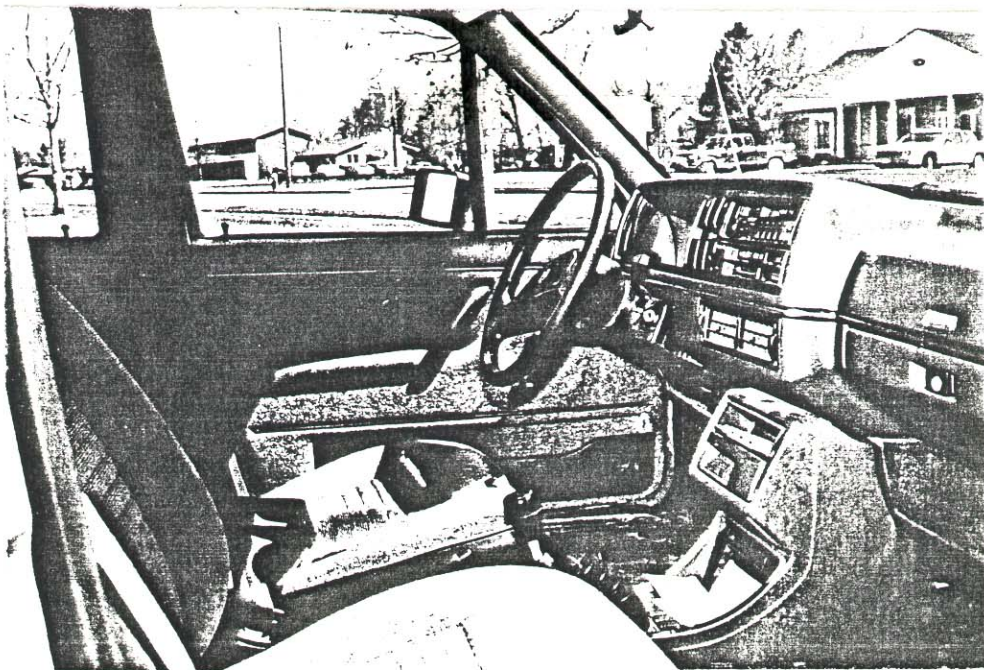
Perpendicular View at the Left Rear Corner Showing the Extent of Crush

54



Perpendicular View Showing Maximum Crush at Right Rear Bumper Corner

55



Overall View of the Driver's Seated Area

56



Adjusted Seat Back Angle and Manual 3-Point Lap
and Shoulder Belt for the Driver of Vehicle #2

SLIDE INDEX

<u>Slide No(s).</u>	<u>Description</u>
1	Accident schematic
2	Driver injury mannequin
3	Child passenger injury mannequin
4-8	Pre-crash trajectory of the Volvo 850 GLT
9	Point of impact
10	Perpendicular view of point of impact
11	Lookback view of vehicle's trajectory
12	Frontal view of the Volvo's damage
13	Right frontal view
14	Left frontal view
15,16	Perpendicular views across the left frontal area
17	Left front three-quarter view
18	Left side view
19,20	Rear three-quarter views of the Volvo
21	Right side view
22,23	Extended sills at the C- and B-pillars for the SIPS
24	Right front three-quarter views
25	Perpendicular view of the right frontal area
26,27	Overall interior views through the left front door
28	Deployed driver's side air bag
29,30	Makeup transfers on driver's air bag
31	Perpendicular view of the module and module cover flaps
32	Sheetmetal reinforcement molded within module cover flaps

SLIDE INDEX (CONT'D.)

<u>Slide No(s).</u>	<u>Description</u>
33	Upper air bag vent ports
34	Lower air bag vent ports
35,36	Left front pyrotechnical pretensioner in the manual belt system
37	Locked left front belt webbing and close-up view of the latchplate
38	View across the interior from the right door opening
39,40	Trajectory and subsequent contact points from the right front child occupant
41,42	Orange fabric transfer on the left edge of the passenger air bag module cover flap
43	Separated module cover tether strap
44	Right front passenger left hand and head contact to windshield and map lights
45	Hand contact to windshield
46-48	Head contact into rear view mirror
49	Mirror scuff on windshield
50-53	Mirror/map light contact
54	Air bag scuff on right upper instrument panel
55	Scuff on transmission shifter
56	Small cut on passenger side air bag
57	Minor glass cuts to headliner above driver's seat
58,59	Rear views of child passenger's trajectory and contact points
60	Dust transfers on inboard edge of right front seat back
61	Integral child safety seat
62	View across the rear seat area and on-board cargo
63	Frontal view of the Volkswagen Golf
64	Left front three-quarter view

SLIDE INDEX (CONT'D.)

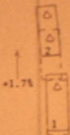
<u>Slide No(s).</u>	<u>Description</u>
65	Left side view
66	Left rear quarter panel and door
67	Left rear three-quarter view
68	Perpendicular view of the rear bumper crash
69	Rear view
70	Start of direct contact damage
71	Damage to rear valance
72	Damage to bumper and sheetmetal filler panel
73	Right rear bumper and sheetmetal valance damage
74	Perpendicular view showing rear bumper displacement
75	Right rear side view
76	Right rear three-quarter view
77	Right front three-quarter view
78	Overall interior view
79,80	Perpendicular views of the driver's seat position and manual 3-point belt system

Shopping center
driveway

Hillcrest

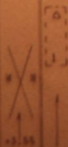
VEHICLES:

- #1 - 1993 Volvo 850 GLT,
4 dr. sedan
- #2 - 1986 Volkswagen Golf,
4 dr. hatchback



Paved gravel
shoulder

Paved and
dirt shoulder



Parking lot
driveway

Scale 1" = 20'

AGE 34

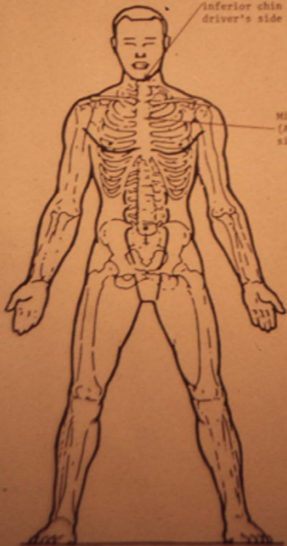
SEX Female

WT. 40.5kg (90 lbs)

HT. 152.4cm (60")

Semicircular contusion with
abrasion of the anterior and
inferior chin (AIS-1).
driver's side air bag

Mid chest contusion
(AIS-1), driver's
side air bag



Fine, diffuse, acute subarachnoid hemorrhage (AIS-3), rearview mirror/maplight

AGE 6
SEX Female
WT. 23 kg (51 lbs)
HT. 111.8 cm (44")

Hematoma of the auricle of the right ear (AIS-1), right front seat cushion

Pronounced brain swelling 1545 grams (AIS-4), rearview mirror/maplight

Local and cerebellar tonsillar herniation (AIS-5), rearview mirror/maplight

0.7 cm hematoma of the intertrial septum over the right atrium (AIS-3), passenger side air bag

Acute contusion of the inferior aspect of the pons on the right (AIS-5), rearview mirror/overhead map light

0.7 cm hematoma of the right frontal scalp (AIS-1), rearview mirror

Acute contusions of the superior aspect of the left and right temporal lobes, anteriorly (AIS-4), rearview mirror/map light

5 cm diameter hematoma over the superior sagittal suture line of the scalp (AIS-1), rearview mirror

4 x 2 cm hematoma at the lateral aspect of the left eye (AIS-1), rearview mirror

Focally hemorrhagic and ecchymotic areas of the lungs (AIS-1), passenger side air bag

4 x 2 cm hematoma to the lateral tip of the nose (AIS-1), rearview mirror

1.7 cm rupture of the capsule of the spleen (AIS-2), passenger side air bag

2 and 3 cm lacerations to the left lateral tip of the nose (AIS-1), rearview mirror

3 x 1.5 cm abrasion at the left lateral aspect of the mouth (AIS-1), passenger side air bag module cover flap

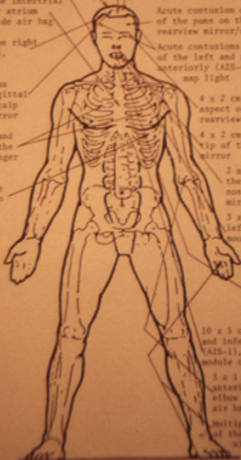
4 x 1 cm hemorrhage to the upper and lower lips (AIS-1), passenger side air bag module cover flap

10 x 5 cm abrasion to the anterior and inferior aspect of the chin (AIS-1), passenger side air bag module cover flap

5 x 1 cm hematoma over the anterior armfold at the left elbow (AIS-1), passenger side air bag module cover flap

Multiple hematomas of the dorsum of the left hand (AIS-1), windshield

Multiple lacerations (glans) ventral to the dorsum of the left hand (AIS-1), windshield











































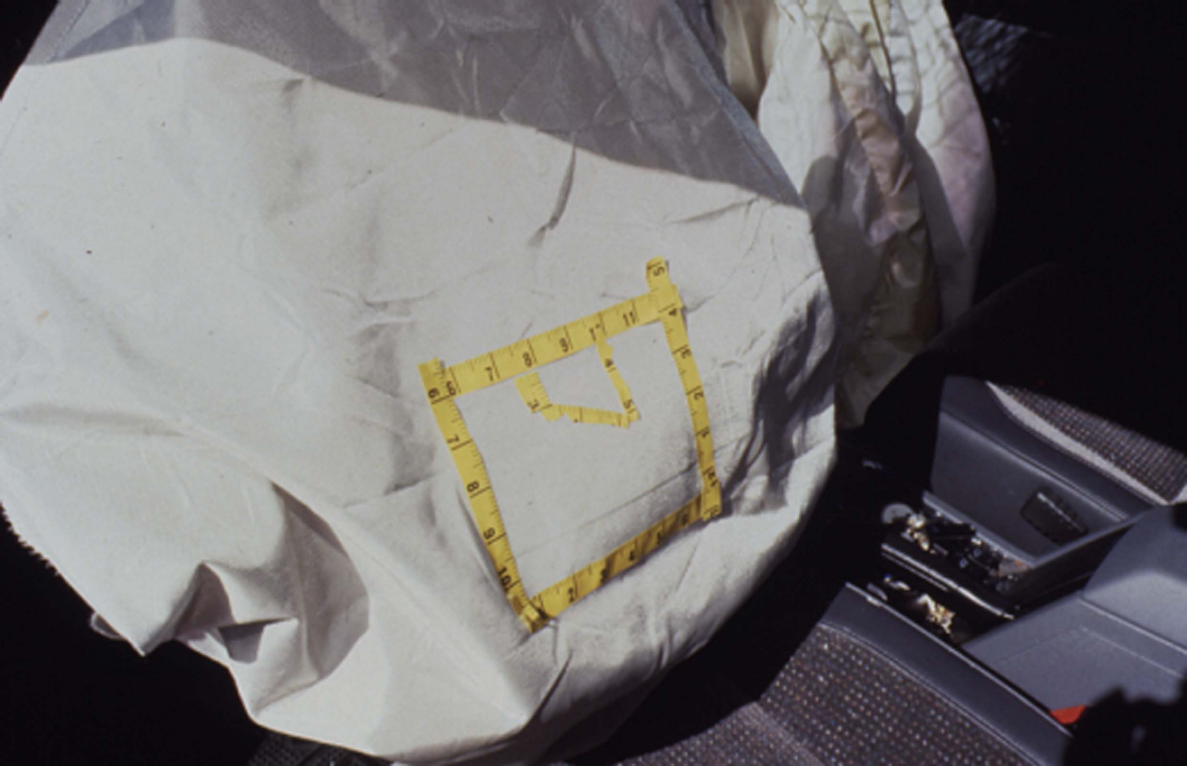






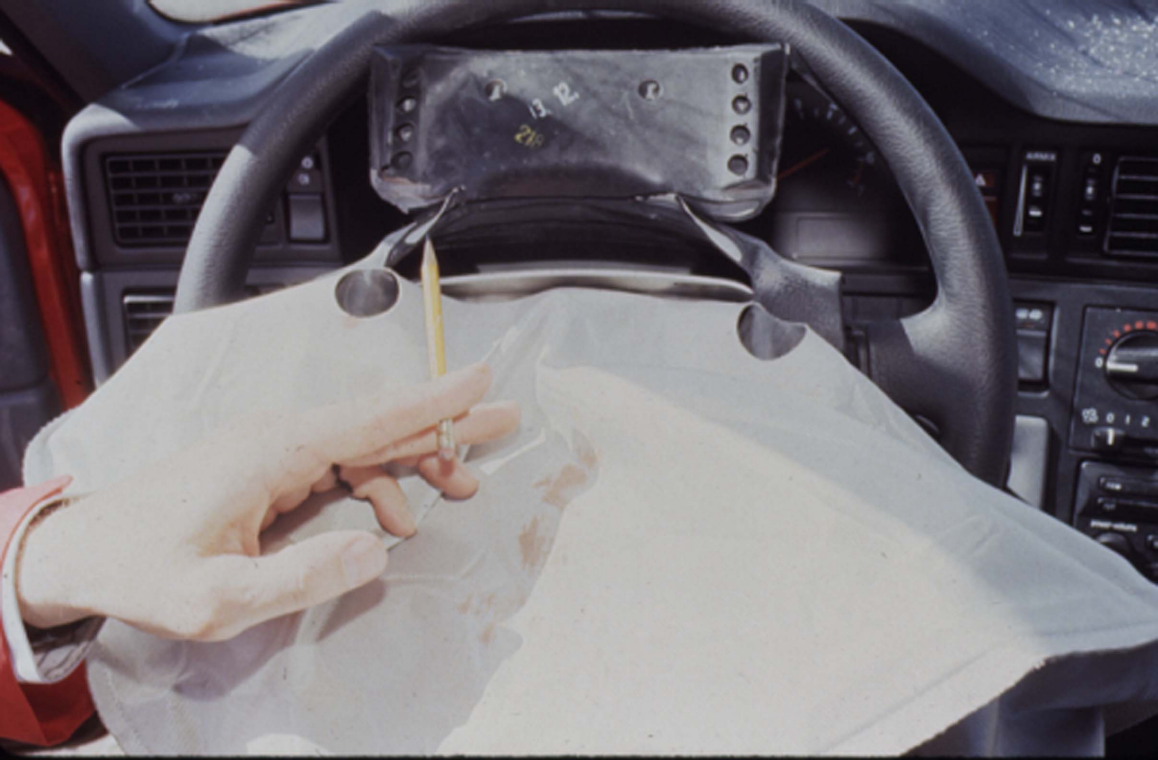














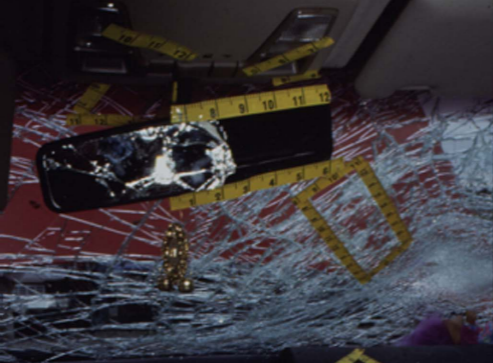




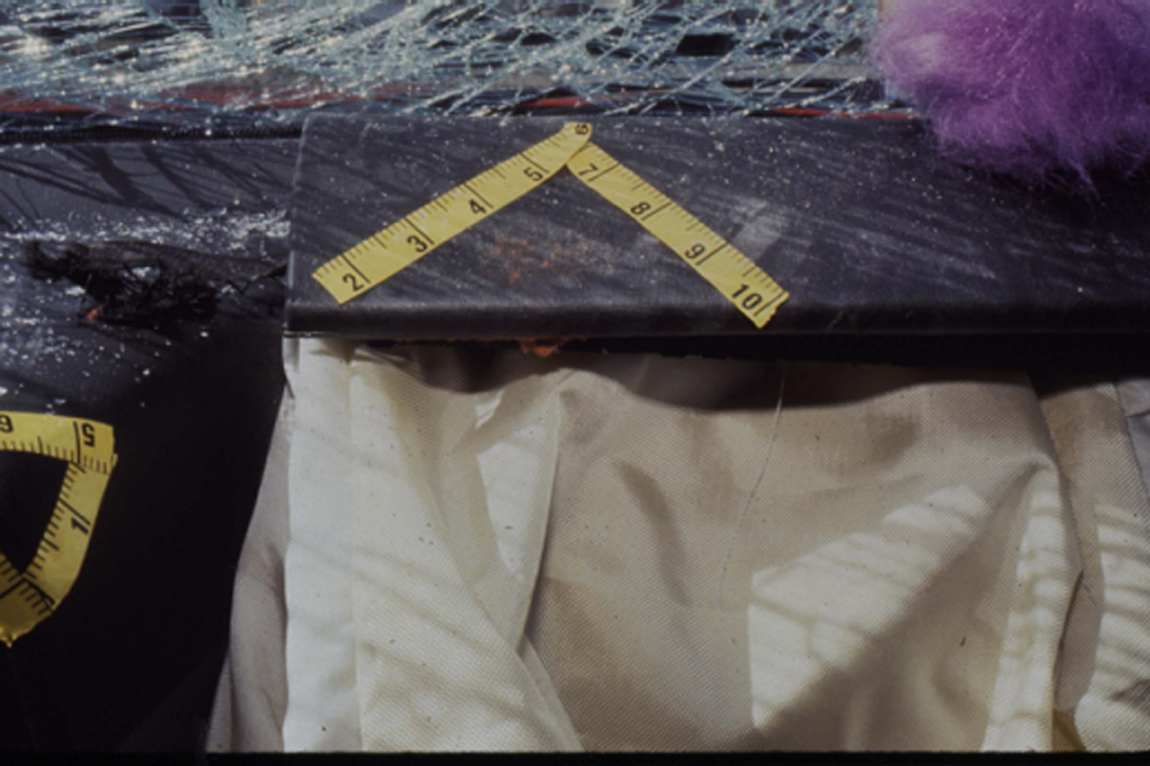




















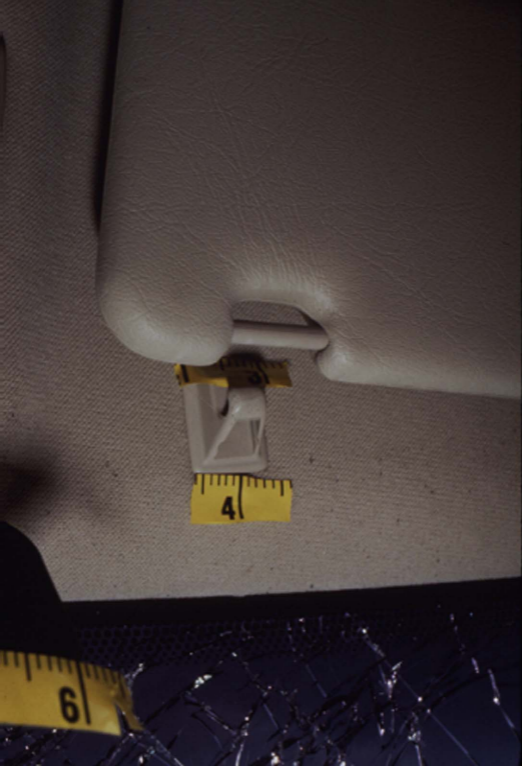




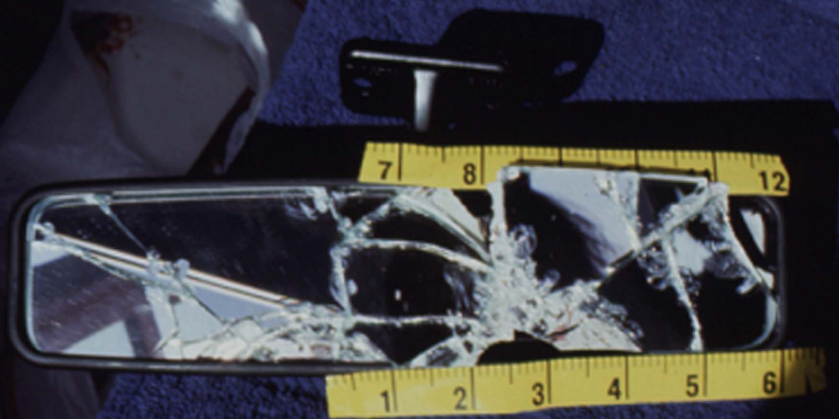












































VOLKSWAGEN

GOLF



VOLKSWAGEN





















APPENDIX A

Police Accident Report

TRAFFIC CRASH REPORT

(Rev. 1-82)

LOCAL REPORT NO. 93	OH-2 OH-3	REPORTING AGENCY N.C.I.C.	ODHS USE ONLY - DO NOT MARK ABOVE					
REPORT TAKEN AT STATION	NO. OF VEH. PEDESTRIANS INVOLVED 2	CRASH SEVERITY (CHECK MOST SEVERE) <input type="checkbox"/> FATAL <input checked="" type="checkbox"/> INJURY <input type="checkbox"/> PROPERTY DAMAGE ONLY		COMBINED VEH/PROP LOSS	<input checked="" type="checkbox"/> OVER \$150 <input type="checkbox"/> UNDER \$150	HIT SKIP <input type="checkbox"/> SOLVED <input type="checkbox"/> UNSOLVED		
IN COUNTY OF	IN CITY VILLAGE TWP OF	DATE OF CRASH 9/3	TIME: MILITARY 1712					
CRASH OCCURRED ON		WITHIN THE INTERSECTION OF						
IF NOT IN INTERSECTION		(LIST NEAREST INTERSECTING STREET, MILEPOST, HOUSE NO.)				CITY CODE		
MILES: 0 FEET W N E S OF		NW						
LOG-1	LOG-2	LOC	JUR	FHE	FLT	DESC		
A	UNIT NO. 1	NO. OF OCCUPANTS 1	OPERATING <input checked="" type="checkbox"/>	PARKED <input type="checkbox"/>	DRIVERLESS <input type="checkbox"/>	HIT & RUN <input type="checkbox"/> NON-CONTACT <input type="checkbox"/>	INSURANCE CO. OR AGENT	
DRIVER-PEDESTRIAN NAME (LAST, FIRST, MI)		ADDRESS (NO., STREET, CITY, STATE, ZIP CODE)						
PHONE NO.		BIRTH DATE	AGE 39	SEX M	SOCIAL SECURITY NO.	STATE OH	DRIVER'S LICENSE NO.	OCCUPATION
OWNER (IF SAME AS DRIVER, WRITE SAME)		ADDRESS SAME					PHONE SAME	
VEH YR 86	MAKE VOLTZWAGN	MODEL GOLF DIESEL	COLOR SILVER	STYLE 4DR	STATE OH	LICENSE PLATE NO.	TOWING SERVICE None	VEH/PED DIR FROM W TO E
CIRCLE DAMAGE AREAS	DAMAGE SEVERITY <input checked="" type="checkbox"/> NON-FUNCTIONAL <input type="checkbox"/> FUNCTIONAL <input type="checkbox"/> DISABLING		DAMAGE SCALE <input type="checkbox"/> NONE <input type="checkbox"/> MODERATE <input checked="" type="checkbox"/> LIGHT <input type="checkbox"/> HEAVY		VEHICLE DISPOSITION <input checked="" type="checkbox"/> DRIVEN AWAY <input type="checkbox"/> REMAINED AT SCENE <input type="checkbox"/> TOWED		FIRE <input checked="" type="checkbox"/> NO FIRE <input type="checkbox"/> FIRE DUE TO CRASH <input type="checkbox"/> OTHER FIRE	
B	UNIT NO. 2	NO. OF OCCUPANTS 2	OPERATING <input checked="" type="checkbox"/>	PARKED <input type="checkbox"/>	DRIVERLESS <input type="checkbox"/>	HIT & RUN <input type="checkbox"/> NON-CONTACT <input type="checkbox"/>	INSURANCE CO. OR AGENT	
DRIVER/PEDESTRIAN NAME (LAST, FIRST, MI)		ADDRESS (NO., STREET, CITY, STATE, ZIP CODE)						
PHONE NO.		BIRTH DATE	AGE 34	SEX F	SOCIAL SECURITY NO.	STATE OH	DRIVER'S LICENSE NO.	OCCUPATION
OWNER (IF SAME AS DRIVER, WRITE SAME)		ADDRESS SAME					PHONE SAME	
VEH YR 93	MAKE Volvo	MODEL 850 GLT	COLOR RED	STYLE 4DR	STATE OH	LICENSE PLATE NO.	TOWING SERVICE	VEH/PED DIR FROM W TO E
CIRCLE DAMAGE AREAS	DAMAGE SEVERITY <input type="checkbox"/> NON-FUNCTIONAL <input checked="" type="checkbox"/> FUNCTIONAL <input type="checkbox"/> DISABLING		DAMAGE SCALE <input type="checkbox"/> NONE <input type="checkbox"/> MODERATE <input checked="" type="checkbox"/> LIGHT <input type="checkbox"/> HEAVY		VEHICLE DISPOSITION <input type="checkbox"/> DRIVEN AWAY <input type="checkbox"/> REMAINED AT SCENE <input checked="" type="checkbox"/> TOWED		FIRE <input checked="" type="checkbox"/> NO FIRE <input type="checkbox"/> FIRE DUE TO CRASH <input type="checkbox"/> OTHER FIRE	
C	FROM UNIT NO. 2	NAME (LAST, FIRST, MI)	BIRTH DATE	AGE 6	SEX F	POSITION A B C D E F		INJURIES 5 3 2 D E F
D	FROM UNIT NO.	NAME (LAST, FIRST, MI)	BIRTH DATE	AGE	SEX	P-PEDESTRIAN		CONDITION
E	FROM UNIT NO.	NAME (LAST, FIRST, MI)	BIRTH DATE	AGE	SEX	RESTRAINTS		ALCOHOL
F	FROM UNIT NO.	NAME (LAST, FIRST, MI)	BIRTH DATE	AGE	SEX	EJECTION		DRUGS
A B C INJURED TAKEN TO BY		A B C INJURED TAKEN TO BY		A B C D E F		A B C D E F		A B C D E F
A <input type="checkbox"/> O.R.C. CITY ORD.		A <input type="checkbox"/> O.R.C. CITY ORD.		A <input type="checkbox"/> O.R.C. CITY ORD.		A <input type="checkbox"/> O.R.C. CITY ORD.		A <input type="checkbox"/> O.R.C. CITY ORD.
RECEIVED CALL 1712		DISPATCHED 1714	ARRIVED 1718	CLEARED 1902	OTHER TIME -0-	TOTAL MINUTES 108	1 NOT EJECTED 2 PARTIAL 3 TOTAL 4 TRAPPED INSIDE VEHICLE	
DATE REPORT FILED 9/3		PHOTOS YES NO	BADGE NO.		CHARGE		1 NO DRUGS DETECTED 2 USING PRESCRIBED DRUG 3 USING ILLICIT DRUG	

LOCAL REPORT NO.

DESCRIBE WHAT HAPPENED
REFER TO UNITS
BY NUMBER

93- [REDACTED]

UNIT #2 A VEHICLE TRAVELING

EAST BOUND ON [REDACTED] RD NW COLLIDED WITH UNIT #1
A VEHICLE STOPPED TO TURN IN EAST BOUND [REDACTED]
TRAFFIC.

WEATHER		1	FIRST HARMFUL EVENT		2
1 NO ADVERSE WEATHER 2 RAIN 3 SNOW			TWO MV IN TRANSPORT		
4 FOG 5 HIGH WIND 6 OTHER			1 HEAD ON 2 REAR-END 3 BACKING 4 SIDESWIDE MEETING 5 SIDESWIDE PASSING 6 ANGLE		
ROAD CONDITIONS		1	ONE MV IN TRANSPORT		
1 DRY 2 WET 3 SNOW			(COLLISION)		
4 ICE 5 DIRT/SAND 6 OTHER			7 PARKED MOTOR VEH 8 PEDESTRIAN 9 ANIMAL 10 TRAIN 11 PEDALCYCLE 12 OTHER NON-M V 13 FIXED OBJECT 14 OTHER OBJECT		
LIGHT		1	(NON-COLLISION)		
1 DAYLIGHT 2 DAWN 3 DUSK			15 FALL FROM OR IN VEH 16 OVERTURNING 17 OTHER NON-COLLISION		
4 DARK NO LIGHTS 5 DARK-LIGHTED 6 OTHER			LOCATION		
ROAD CONTOUR		2	1 INTERSECTION 2 INTERSECTION-RELATED 3 DRIVEWAY ACCESS 4 RAILROAD CROSSING 5 BRIDGE-PASSING OVER 6 BRIDGE-PASSING UNDER 7 NON-INTERSECTION 8 PRIVATE PROPERTY		
1 STRAIGHT LEVEL 2 STRAIGHT GRADE			3		
3 CURVE LEVEL 4 CURVE GRADE			RAMP LETTER CODE		
OCCURRENCE		1			
1 ON ROADWAY 2 OFF LEFT SIDE					
3 OFF RIGHT SIDE 4 ON OPPOSING LANE OF A DIVIDED HIGHWAY					
SPECIAL AREA					
1 ROAD CONSTRUCTION 2 SCHOOL ZONE					

SHOW NORTH WITH ARROW

NW

* NOT TO SCALE

NW

1#2

#2 #1

RECONSTRUCTED DIAGRAM OF MOVEMENT

TYPE OF UNIT		#1	A	#2	B	PRE-CRASH ACTIONS		A	B	CONTRIBUTING FACTOR		A	B
1 SUB-COMPACT 2 COMPACT 3 MID SIZE 4 FULL SIZE						1 GOING STRAIGHT 2 TURNING RIGHT 3 TURNING LEFT 4 TURNING ON RED LIGHT 5 U TURN 6 STOPPED TO TURN 7 STOPPED IN TRAFFIC 8 PARKING/UNPARKING 9 PARKED 10 BACKING 11 PASSING 12 CHANGING LANES 13 MERGING/EXITING RAMP 14 OUT OF CONTROL 15 SWERVING 16 DRIVERLESS VEH 17 OTHER DRV ACTIONS				1 NONE 2 FAILURE TO YIELD 3 UNSAFE SPEED 4 FOLLOWING TOO CLOSELY OR ACDA 5 RAN RED LIGHT 6 RAN STOP OR YIELD SIGN 7 IMPROPER TURN 8 IMPROPER PASSING 9 IMPROPER LANE CHANGE 10 IMPROPER BACKING 11 IMPROPER START FROM PARKED POSITION 12 STOPPED OR PARKED ILLEGALLY 13 LEFT OF CENTER 14 FAILURE TO CONTROL 15 DRIVER INATTENTION 16 DROVE OFF ROAD 17 OTHER DRIVER ERROR			
CAR						PEDESTRIAN ACTIONS				NON-DRIVER FACTOR			
16 SCHOOL 17 CHURCH 18 PUBLIC BUS						18 CROSSING IN X-WALK 19 CROSSING OTHER THAN X-WALK 20 WALKING IN ROAD (WITH TRAFFIC) 21 WALKING IN ROAD (AGAINST TRAFFIC) 22 PLAYING IN ROAD 23 WORKING ON ROAD 24 ENTERING OR LEAVING VEHICLE 25 PUSHING/WORKING ON VEH IN ROAD 26 OTHER IN ROAD 27 ON SIDEWALK OR SHOULDER				18 VEHICLE DEFECTS 19 LOAD SHIFTING 20 FALLING, SPILLING 21 PAVEMENT DEFECT 22 SHOULDER DEFECT 23 DEBRIS ON ROAD 24 DOWNED TRAFFIC SIGN/DEVICE 25 VISION OBSTRUCTION 26 ANIMAL ACTIONS 27 PEDESTRIAN ACTIONS			
TRUCK						TRAFFIC CONTROL		A	B	VEHICLE DEFECTS		A	B
5 PICKUP 6 PANEL/VAN 7 STRAIGHT TRUCK 8 STRAIGHT TRUCK AND TRAILER 9 TRUCK TRACTOR 10 TRACTOR & SEMI-TRAILER 11 TRACTOR & DOUBLE TRAILER						1 NONE 2 UTILITY POLE 3 TRAFFIC SIGN 4 BRIDGE/CULVERT 5 GUARD RAIL 6 FENCE 7 TREE 8 SHRUBBERY 9 CURB 10 DITCH 11 EMBANKMENT 12 BUILDING 13 MAIL BOX 14 CONSTRUCTION BARRICADE 15 FIRE HYDRANT 16 OTHER OBJECT				CODE IF CONTRIBUTING FACTOR IS 18			
MOTORCYCLE						DRIVER				TRUCK LOAD		A	B
12 MC UP TO 350CC 13 MC351CC TO 750CC 14 MC OVER 751CC 15 MOTORIZED BICYCLE						1 NO CONTROLS 2 STOP SIGN 3 YIELD SIGN 4 TRAFFIC SIGNAL 5 TRAFFIC FLASHERS 6 SCHOOL ZONE 7 RAILROAD CROSSBUCKS 8 RAILROAD FLASHERS 9 RAILROAD GATES 10 CONSTR BARRICADES 11 POLICE OFFICER 12 PAVEMENT MARKINGS 13 OTHER				1 EMPTY 2 PERISHABLE GOODS 3 GENERAL FREIGHT 4 METAL/HEAVY MACHINERY 5 HAZARDOUS GAS 6 HAZARDOUS LIQUID 7 HAZARDOUS SOLID 8 RADIOACTIVE MATERIAL			
SPEED						PEDESTRIAN				TRUCK AXLES		A	B
UNIT EST. LEGAL						14 NO CONTROLS 15 CROSSWALK LINES 16 WALK/DON'T WALK DEVICE				1 TURN SIGNALS 2 HEAD LAMPS 3 TAIL LAMPS 4 BRAKES 5 STEERING 6 TIRE BLOWOUT 7 WORN OR SLICK TIRES 8 TRAILER EQUIPMENT DEFECTIVE 9 MOTOR TROUBLE 10 DISABLED FROM PRIOR ACCIDENT 11 OTHER DEFECTS			
UNIT DRIVER PASS													
A 0 35													
B 30 35													
PLEASE CHECK TO SEE THAT ALL BOXES ARE CLEAR ENOUGH TO BE MICROFILMED.													
1 NO HELMET 2 FULL COVERAGE 3 FULL FACIAL COVER 4 OTHER TYPE HELMET													

SUPPLEMENT (Rev. 1/82)

(Rev. 1/82)

POLICE ACTION

4 (Rev. 1/82)

93

(Rev. 1/82)

63

DRIVER-PEDESTRIAN-VEHICLE SECTION

OCCUPANT SECTION

POLICE ACTION

TRAFFIC ACCIDENT - DIAGRAM/NARRATIVE CONTINUATION

OH-2 (Rev. 1/82)

LOCAL REPORT NUMBER. 93-	REPORTING AGENCY [REDACTED] POLICE DEPT	DATE OF ACCIDENT [REDACTED] Y 93
IN COUNTY OF [REDACTED]	ACCIDENT LOCATION [REDACTED]	

ALONG FROM
EDGE EDGE

NOT TO SCALE



A	121.2	14.7
B	130.8	14.6
C	141.7	11.2
D	149.8	10.8
E	136.0	16.0
F	0	23.0



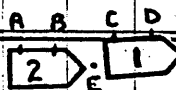
O.E.

POLE

POLE TO X
21.1



x



F

UNIT # 2

93 VOLVO, RED, 4DR

UNIT # 1

86 VOLKSWAGEN, SILVER, 2DR

E= POINT OF IMPACT

17:14 51°

OFFICER'S SIGNATURE

BADGE NO.

TRAFFIC CRASH — DIAGRAM/NARRATIVE CONTINUATION

(Rev. 1/82)

LOCAL REPORT NUMBER 93	REPORTING AGENCY [REDACTED] Police Dept.	DATE OF CRASH [REDACTED] IV 93
IN COUNTY OF [REDACTED]	CRASH LOCATION [REDACTED]	

Upon this officer's arrival to the accident scene, it was noted Unit #2, a red Volvo was observed to have heavy windshield damage caused by the impact of a 6 year old passenger. It was also noted the Volvo did not lay skid marks indicating an attempted evasive maneuver. [REDACTED] Fire Dept. had removed the child and placed her on a stretcher. The operator of Unit #1 was consoling the operator of Unit #2.

In speaking with the operator of Unit #1, it was learned he was at a complete stop waiting on heavy eastbound traffic to clear for a north turn into the lot of [REDACTED] Road. Unit #1 remarked he saw the vehicle coming up behind him and once the collision occurred, bouncing him forward several feet, he attempted to keep the vehicle from crossing lanes. The operator remarked he never saw the child, that he had checked on the well being of the driver. He reported there was alot of "Dust" floating around in the car. Once the Fire Dept. arrived he was shocked to learn of the child being found as a passenger. Both airbags were noted to have been deployed. The vehicle damage of Unit #2 was restricted to largely the front grill and driver side headlight, buckling the quarter panel area. As stated before, the windshield was noted as the most heavily damaged area. Both the driver and the passenger of Unit #2 were transported to [REDACTED] Hospital for their injuries. A Statement was secured from the operator of Unit #1. The child was reported to have coded in the ambulance, however, the Fire Dept. personnel were able to revive her. Emergency room personnel scrambled to stabilize her before she was life flighted to [REDACTED] Hospital where she was listed in serious condition in I.C.U.. [REDACTED] Dispatch was able to periodically check on the child's status. The last contact being reported as dangerously critical, with a poor chance for survival.

continued next page,

Page One

OFFICER SIGNATURE [REDACTED]

BADGE NO [REDACTED]

TRAFFIC CRASH — DIAGRAM/NARRATIVE CONTINUATION

2 (Rev. 1/82)

LOCAL REPORT NUMBER 93-	REPORTING AGENCY [REDACTED] Police Dept.	DATE OF CRASH [REDACTED] Y 93
IN COUNTY OF [REDACTED]	CRASH LOCATION [REDACTED]	

Officer [REDACTED] had taken numerous interior and exterior photo's of the scene, before the vehicle was impounded. Also checked, were the brake light and turning indicators of Unit #1, which were observed to be functioning properly. Upon vehicle inventory it was noted the passenger seat belt system was not engaged as if the child had "escaped" from a secured system. In speaking with Fire Dept. personnel, no persons had reported unbuckling the safety belt.

In speaking with the operator of Unit #2, it was reported Unit #1 had suddenly come to a stop giving her no time to avoid a collision. The operator reported she was traveling approximately 30 mph, and that she and her daughter both had their safety belt systems secured. No written statement was requested from the operator due to the terrible circumstances of the child's well being.

Page Two

OFFICER SIGNATURE [REDACTED] BADGE NO [REDACTED]

TRAFFIC CRASH WITNESS STATEMENT

3 REV 1/7

LOCAL
REPORT
NUMBER

93-

REPORTING
AGENCY

P.D.

CRASH

1993

FOR LOCAL USE ONLY — DO NOT SUBMIT TO THE STATE EXCEPT FOR FATAL CRASHES

I, [REDACTED] (PRINTED) HEREBY MAKE THIS VOLUNTARY STATEMENT TO

PH

(OFFICER'S NAME)

AT

(LOCATION)

X I WAS STOPPED IN FRONT OF CLUB IN FRONT OF THE SOUTH ENTRANCE PREPARING TO TURN LEFT INTO THE PARKING LOT. I WAS WAITING FOR ONCOMING TRAFFIC TO CLEAR TO PROVIDE AN OPPORTUNITY TO MAKE THE LEFT TURN. I LOOKED IN MY REAR VIEW MIRROR AND NOTICED A RED CAR COMING FROM BEHIND AND REALIZED THAT SHE MIGHT NOT STOP IN TIME. THE RED CAR STRUCK THE REAR OF MY CAR AND PUSHED MY CAR FORWARD. I WAS ABLE TO PREVENT MY CAR FROM ONCOMING TRAFFIC. I WAS WEARING A SEAT BELT, SO I UNBUCKLED MY BELT AND RAN TO THE RED CAR TO OFFER ASSISTANCE.

ADDRESS
OF
WITNESS

SIGNATURE
OF
WITNESS

OFFICE

PHONE

TRAFFIC CRASH WITNESS STATEMENT

3 REV 1/

LOCAL
REPORT
NUMBER

93-

REPORTING
AGENCY

Police

DATE OF CRASH

M 11/93

FOR LOCAL USE ONLY — DO NOT SUBMIT TO THE STATE EXCEPT FOR FATAL CRASHES

I, [REDACTED] (PRINTED) HEREBY MAKE THIS VOLUNTARY STATEMENT TO

AT [REDACTED]

(OFFICER'S NAME)

(LOCATION)

On [REDACTED], 1993 at approx. 5:20 PM I was driving home approaching [REDACTED] Ave on [REDACTED] Rd. I crested the hill before the traffic signal at above intersection. There was a rear-end collision in front of Drive to [REDACTED] Club. As I passed the scene I saw that the windshield was shattered so I parked my vehicle alongside the road & ran over to drivers side of vehicle & asked the driver if she was okay? She was very upset and lunged over to passenger floor with arms extended at what I could see as a red form. She then got out of vehicle as I tried to calm her I looked across to passenger side and saw a little girl on floor with her head slightly turned on the seat. I saw blood around her nose & mouth. The driver was not belted upon my arrival. I asked a gentleman standing at entrance to [REDACTED] Club if he called 911 and asked him to please stop traffic so I could assist little girl. The door was locked. I asked the driver to unlock the door. She was in driver seat and leaned over to unlock it. I felt for pulse on the girl (carotid) and indeed felt pulse. I plac

ADDRESS
OF
WITNESS

PHONE

SIGNATURE
OF
WITNESS

OFFICER'S SIGNATURE

REV 1/82

93-

REPORTING AGENCY [REDACTED]

Police

BEST AVAILABLE COPY

DATE OF CRASH

v93

FOR LOCAL USE ONLY — DO NOT SUBMIT TO THE STATE EXCEPT FOR FATAL CRASHES

I, _____

(PRINTED) _____ HEREBY MAKE THIS VOLUNTARY STATEMENT TO

(PRINTED)

AT

(OFFICERS NAME)

(LOCATION)

my hand on her chest to check for breathing and air exchange through nose and mouth. I held her head as close to alignment as I could to maintain an airway, and awaited the paramedics arrival. I looked to see if ~~it~~^{hrs} the seat belt had been fastened. It was not. The air bags upon driver + passenger side were still deflating and there were signs of smoke filtering in the car, when I first arrived. There were blood puddles on the passenger seat approx 2 1/2 to 3 inches in diameter. The little girl was unconscious the entire time even after the paramedics extricated her. I kept head alignment as they moved her onto long board, and took her to ambulance. I stayed to ask officer if they needed me further. She replied no, so I left at that point.

**ADDRESS
OF
WITNESS**

SIGNATURE
OF
WITNESS

PHONE

APPENDIX B

CRASHPC Output Damage and Trajectory Algorithm

SUMMARY OF CRASHPC RESULTS USING DAMAGE

93-7

	SPEED CHANGE (DAMAGE)	IMPACT SPEED (DAMAGE AND SPINOUT)
VEHICLE #1		
TOTAL	12 KPH (7 MPH)	22 KPH (13 MPH)
LONGITUDINAL	-12 KPH (-7 MPH)	22 KPH (13 MPH)
LATITUDINAL	0 KPH (0 MPH)	0 KPH (0 MPH)
PDOF ANGLE	-1 DEGREES	
ENERGY DISSIPATED =	7890 JOULES (5819 FT-LB)	
VEHICLE #2		
TOTAL	17 KPH (11 MPH)	1 KPH (0 MPH)
LONGITUDINAL	17 KPH (11 MPH)	-1 KPH (0 MPH)
LATITUDINAL	0 KPH (0 MPH)	0 KPH (0 MPH)
PDOF ANGLE	-179 DEGREES	
ENERGY DISSIPATED =	14500 JOULES (10693 FT-LB)	

SCENE INFORMATION

	VEHICLE #1	VEHICLE #2
IMPACT X-POSITION	2.1 M. (6.8 FT.)	6.7 M. (22.0 FT.)
IMPACT Y-POSITION	1.5 M. (4.9 FT.)	.9 M. (2.8 FT.)
IMPACT HEADING ANGLE	0 DEGREES	-1 DEGREES
REST X-POSITION	2.4 M. (8.0 FT.)	8.5 M. (28.0 FT.)
REST Y-POSITION	1.5 M. (5.0 FT.)	.7 M. (2.3 FT.)
REST HEADING ANGLE	-1 DEGREES	-6 DEGREES
SIDE-SLIP ANGLE	0 DEGREES	0 DEGREES
DIRECTION OF ROTATION	CCW	CCW
AMOUNT OF ROTATION	<360	<360

COLLISION AND SEPARATION

	VEHICLE #1	VEHICLE #2
COLLISION		
IMPACT X-POSITION	2.1 M. (6.8 FT.)	6.7 M. (22.0 FT.)
IMPACT Y-POSITION	1.5 M. (4.9 FT.)	.9 M. (2.8 FT.)
IMPACT HEADING ANGLE	0 DEGREES	-1 DEGREES
SEPARATION (USING SPINOUT)		
US	10 KPH (6 MPH)	16 KPH (10 MPH)
VS	1 KPH (0 MPH)	-1 KPH (-1 MPH)
PSISD	-10 DEG/SEC	-23 DEG/SEC

DAMAGE DATA

	VEHICLE #1	VEHICLE #2
SIZE CATEGORY	3	2
STIFFNESS CATEGORY	3	2
VEHICLE WEIGHT	1495 KGS (3295 LBS)	1054 KGS (2324 LBS)
CDC	12FYMW1	06BZEW1
PDOF ANGLE	-1 DEGREES	181 DEGREES
CRUSH LENGTH	150 CM. (59 IN.)	150 CM. (59 IN.)
C1	2 CM. (1 IN.)	0 CM. (0 IN.)
C2	3 CM. (1 IN.)	1 CM. (0 IN.)
C3	4 CM. (2 IN.)	1 CM. (1 IN.)
C4	2 CM. (1 IN.)	2 CM. (1 IN.)
C5	0 CM. (0 IN.)	3 CM. (1 IN.)
C6	0 CM. (0 IN.)	4 CM. (2 IN.)
D	-28 CM. (-11 IN.)	21 CM. (8 IN.)
D'	-51 CM. (-20 IN.)	47 CM. (18 IN.)

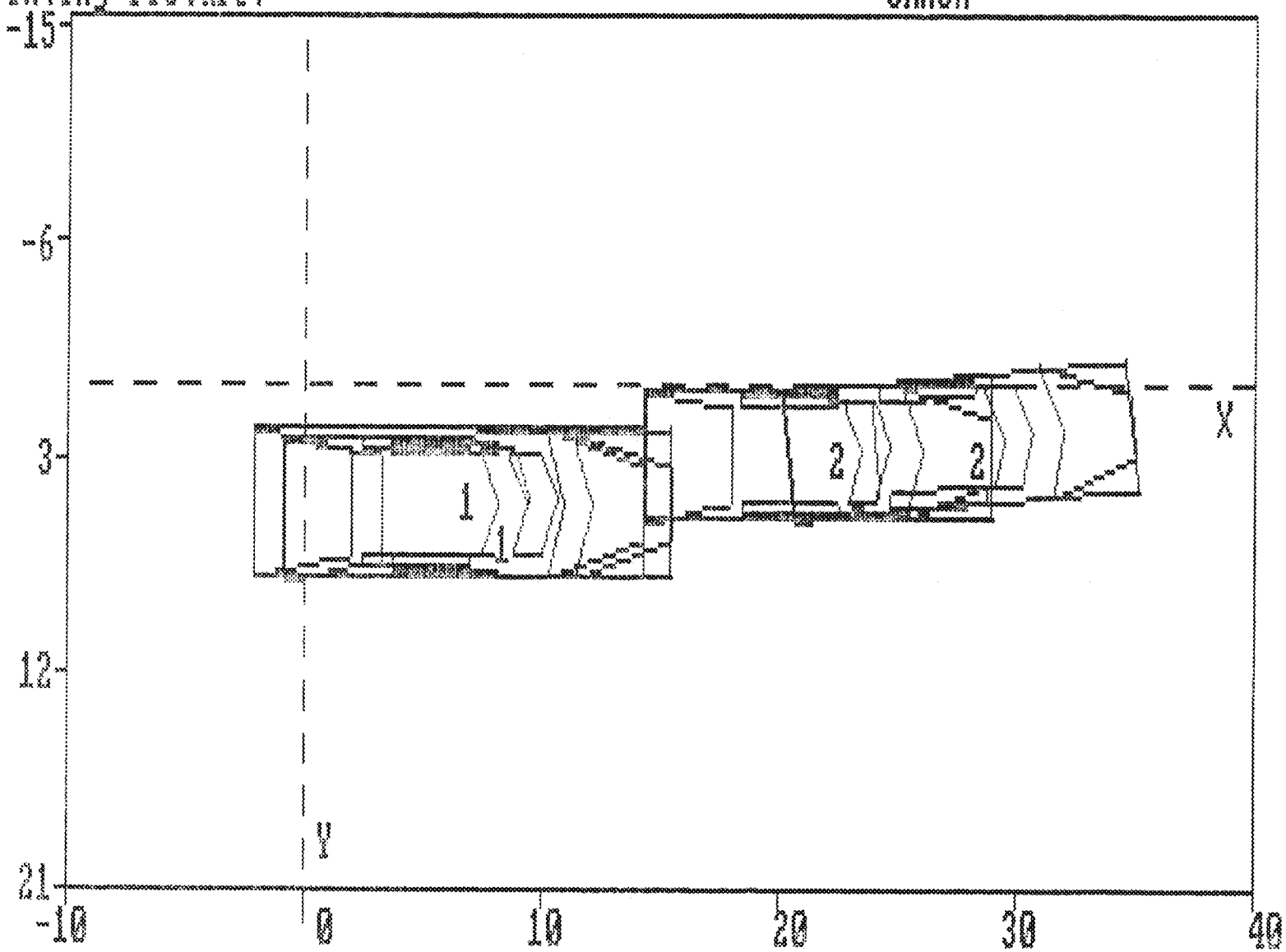
(* INDICATES DEFAULT VALUE)

DIMENSIONS AND INERTIAL PROPERTIES

	VEHICLE #1	VEHICLE #2
CG TO FRONT AXLE	130 CM. (51 IN.)	118 CM. (46 IN.)
CG TO REAR AXLE	141 CM. (56 IN.)	127 CM. (50 IN.)
TRACK	150 CM. (59 IN.)	139 CM. (55 IN.)
CG TO FRONT OF VEH	228 CM. (90 IN.)	212 CM. (83 IN.)
CG TO REAR OF VEH	-270 CM. (-106 IN.)	-233 CM. (-92 IN.)
CG TO SIDE OF VEH	92 CM. (36 IN.)	85 CM. (34 IN.)
MOMENT OF INERTIA	12918 KGS (28478 LBS)	8089 KGS (17832 LBS)
VEHICLE MASS	4 KGS (9 LBS)	3 KGS (6 LBS)
ROLLING RESISTANCE		
LEFT FRONT WHEEL	1.00	.80
RIGHT FRONT WHEEL	1.00	.80
LEFT REAR WHEEL	1.00	.75
RIGHT REAR WHEEL	1.00	.75

Printing Picture:

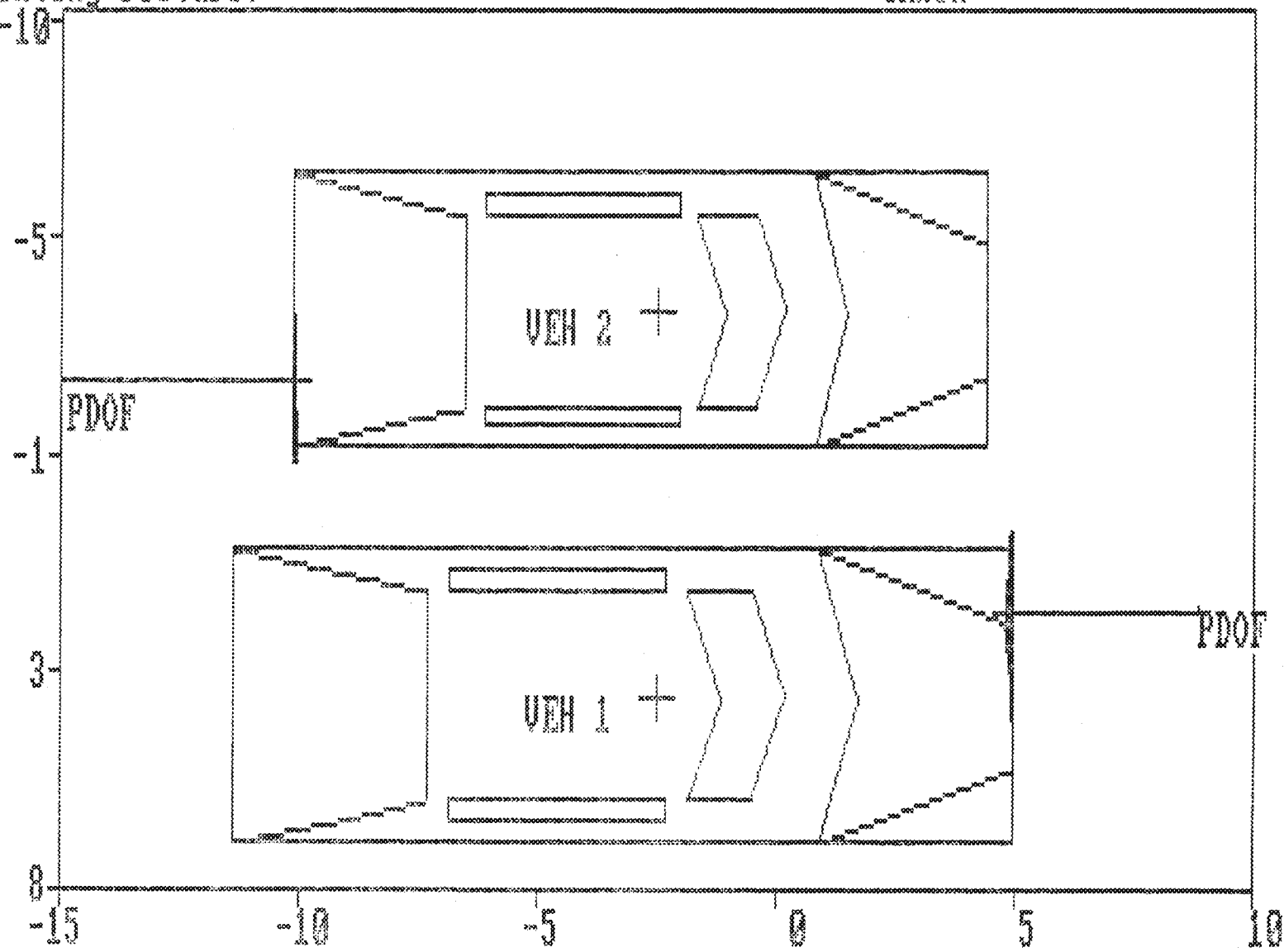
CRASH



SCENE DESCRIPTION

Printing Picture:

CRASH



DAMAGE DESCRIPTION

APPENDIX C
NASS Vehicle Forms

VEHICLE #1

1993 Volvo 850 GLT



GENERAL VEHICLE FORM

<p>1. Primary Sampling Unit Number _____</p> <p>2. Case Number - Stratum <u>93-07</u></p> <p>3. Vehicle Number <u>01</u></p> <p style="text-align: center;">VEHICLE IDENTIFICATION</p> <p>4. Vehicle Model Year <u>93</u> Code the last two digits of the model year (99) Unknown</p> <p>5. Vehicle Make (specify): <u>51</u> Applicable codes are found in your NASS Data Collection, Coding and Editing Manual. (99) Unknown</p> <p>6. Vehicle Model (specify): <u>042</u> Applicable codes are found in your NASS Data Collection, Coding and Editing Manual. (999) Unknown</p> <p>7. Body Type <u>04</u> Note: Applicable codes may be found on the back of this page.</p> <p>8. Vehicle Identification Number <u>YV1L55500P2</u> Left justify; Slash zeros and letter Z (0 and Z) No VIN—Code all zeros Unknown—Code all nine's</p> <p style="text-align: center;">OFFICIAL RECORDS</p> <p>9. Police Reported Vehicle Disposition <u>1</u> (0) Not towed due to vehicle damage (1) Towed due to vehicle damage (9) Unknown</p> <p>10. Police Reported Travel Speed <u>048</u> Code to the nearest kph (NOTE: 000 means less than 0.5 kph) (160) 159.5 kph and above (999) Unknown <u>30</u> mph X 1.6093 = <u>048</u> kph</p>	<p>11. Police Reported Alcohol Presence <u>0</u> (0) No alcohol present (1) Yes (alcohol present) (7) Not reported (8) No driver present (9) Unknown</p> <p>Note: See variables 37 through 55 (Page 4) for information on Other Drugs</p> <p>12. Alcohol Test Result For Driver <u>96</u> Code actual value (decimal implied before first digit—0.xx) (95) Test refused (96) None given (97) AC test performed, results unknown (98) No driver present (99) Unknown</p> <p>Source: _____</p> <p style="text-align: center;">ACCIDENT RELATED</p> <p>13. Speed Limit <u>056</u> (000) No statutory limit Code posted or statutory speed limit in kph (999) Unknown <u>35</u> mph X 1.6093 = <u>056</u> kph</p> <p>14. Attempted Avoidance Maneuver <u>02</u> (00) No impact (01) No avoidance actions (02) Braking (no lockup) (03) Braking (lockup) (04) Braking (lockup unknown) (05) Releasing brakes (06) Steering left (07) Steering right (08) Braking and steering left (09) Braking and steering right (10) Accelerating (11) Accelerating and steering left (12) Accelerating and steering right (97) No driver present (98) Other action (specify): (99) Unknown</p> <p>15. Accident Type <u>20</u> Applicable codes may be found on the back of page two of this field form (00) No impact Code the number of the diagram that best describes the accident circumstance (98) Other accident type (specify): (99) Unknown</p>
--	--

**** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ****

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (07) Hatchback, number of doors unknown
- (08) Other automobile type (specify): _____
- (09) Unknown automobile type

Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
- (11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
- (12) Large limousine - more than four side doors or stretched chassis
- (13) Three-wheel automobile or automobile derivative

Utility Vehicles ($\leq 4,500$ kgs GVWR)

- (14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [78 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Samurai, Sidekick, Rocky)
- (15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Landcruiser, Rover, Scout)
- (16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
- (19) Utility, unknown body type

Van Based Light Trucks ($\leq 4,500$ kgs GVWR)

- (20) Minivan (Chrysler Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Dodge/Plymouth Vista, Aerostar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Vanagon/Camper.)
- (21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
- (22) Step van or walk-in van ($\leq 4,500$ kgs GVWR)
- (23) Van based motorhome ($\leq 4,500$ kgs GVWR)
- (24) Van based school bus ($\leq 4,500$ kgs GVWR)
- (25) Van based other bus ($\leq 4,500$ kgs GVWR)
- (26) Other van type (Hi-Cube Van, Kary) (specify): _____
- (29) Unknown van type

Light Conventional Trucks (Pickup style cab, $\leq 4,500$ kgs GVWR)

- (30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10, T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, Pup, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
- (31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500.)

- (32) Pickup with slide-in camper
- (33) Convertible pickup
- (39) Unknown pickup style light conventional truck type

Other Light Trucks ($\leq 4,500$ kgs GVWR)

- (40) Cab chassis based (includes rescue vehicles, light trucks, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (45) Other light conventional truck type
- (48) Unknown light truck type
- (49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Bus (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): _____
- (59) Unknown bus type

Medium/Heavy Trucks ($> 4,500$ kgs GVWR)

- (60) Step van ($> 4,500$ kgs GVWR)
- (61) Single unit straight truck ($4,500$ kgs $<$ GVWR $\leq 8,850$ kgs)
- (62) Single unit straight truck ($8,850$ kgs $<$ GVWR $\leq 12,000$ kgs)
- (63) Single unit straight truck ($> 12,000$ kgs GVWR)
- (64) Single unit straight truck, GVWR unknown
- (65) Medium/heavy truck based motorhome
- (67) Truck-tractor with no cargo trailer
- (68) Truck-tractor pulling one trailer
- (69) Truck-tractor pulling two or more trailers
- (70) Truck-tractor (unknown if pulling trailer)
- (78) Unknown medium/heavy truck type
- (79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (80) Motorcycle
- (81) Moped (motorized bicycle)
- (82) Three-wheel motorcycle or moped
- (88) Other motored cycle (minibike, motorscooter) (specify): _____
- (89) Unknown motored cycle type

Other Vehicles

- (90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (91) Snowmobile
- (92) Farm equipment other than trucks
- (93) Construction equipment other than trucks
- (97) Other vehicle type
- (99) Unknown body type

OCCUPANT RELATED

16. Driver Presence in Vehicle 1
 (0) Driver not present
 (1) Driver present
 (9) Unknown
17. Number of Occupants This Vehicle 02
 (00-96) Code actual number of occupants for this vehicle
 (97) 97 or more
 (99) Unknown
18. Number of Occupant Forms Submitted 02

24. Rollover 0
 (0) No rollover (no overturning)
- Rollover (primarily about the longitudinal axis)*
 (1) Rollover, 1 quarter turn only
 (2) Rollover, 2 quarter turns
 (3) Rollover, 3 quarter turns
 (4) Rollover, 4 or more quarter turns (specify):

- (5) Rollover--end-over-end (i.e., primarily about the lateral axis)
 (9) Rollover (overturn), details unknown

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight 1450
 _____ Code weight to nearest 10 kilograms.
 (045) Less than 450 kilograms
 (610) 6,100 kilograms or more
 (999) Unknown
03,187 lbs X .4536 = 1,446 kgs
 Source: _____
20. Vehicle Cargo Weight 0000
 _____ Code weight to nearest 10 kilograms.
 (000) Less than 5 kilograms
 (450) 4,500 kilograms or more
 (999) Unknown
 _____ lbs X .4536 = _____ kgs

OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this Vehicle) 1
26. Rear Override/Underride (this Vehicle) 0
 (0) No override/underride, or not an end-to-end impact
- Override (see specific CDC)*
 (1) 1st CDC
 (2) 2nd CDC
 (3) Other not automated CDC (specify):

- Underride (see specific CDC)*
 (4) 1st CDC
 (5) 2nd CDC
 (6) Other not automated CDC (specify):

- (7) Medium/heavy truck or bus override
 (9) Unknown

RECONSTRUCTION DATA

21. Towed Trailing Unit 0
 (0) No towed unit
 (1) Yes--towed trailing unit
 (9) Unknown
22. Documentation of Trajectory Data for This Vehicle 0
 (0) No
 (1) Yes
23. Post Collision Condition of Tree or Pole (For Highest Delta V) 0
 (0) Not collision (for highest delta V) with tree or pole
 (1) Not damaged
 (2) Cracked/sheared
 (3) Tilted <45 degrees
 (4) Tilted ≥45 degrees
 (5) Uprooted tree
 (6) Separated pole from base
 (7) Pole replaced
 (8) Other (specify):

 (9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

- Values: (000)-(359) Code actual value
 (997) Noncollision
 (998) Impact with object
 (999) Unknown
27. Heading Angle For This Vehicle 085
28. Heading Angle For Other Vehicle 084

29. Basis for Total Delta V (highest) 2*Delta V Calculated*

- (1) CRASH program—damage only routine
- (2) CRASH program—damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique, regardless of adequacy of damage data.
- (6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

30. Total Delta V

Secondary Highest

0 1 2

____ Nearest kph

(NOTE: 000 means less than
0.5 kph)
(160) 159.5 kph and above
(999) Unknown

31. Longitudinal Component of
Delta V+ 0 1 2

____ Nearest kph

(NOTE: 000 means greater than
-0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(999) Unknown

Secondary

Highest

32. Lateral Component of Delta V 0 0 0

____ Nearest kph

(NOTE: 000 means greater than
-0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(999) Unknown

33. Energy Absorption

0 0 7 9 0 0789 Nearest 100 joules

(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

34. Confidence In Reconstruction Program
Results (For Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model — results appear reasonable
- (2) Collision fits model — results appear high
- (3) Collision fits model — results appear low
- (4) Borderline reconstruction — results appear reasonable

35. Type of Vehicle Inspection

- (0) No inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes - researcher determined
- (2) VIN determined air bag system
- (3) VIN determined automatic (passive) belts
- (4) VIN determined air bag and automatic (passive) belts

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [] YES [] NO

IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [] YES [] NO

37. Police Reported Other Drug Presence 0

- (0) No other drugs present
 (1) Yes (other drug present)
 (7) Not reported
 (8) No driver present
 (9) Unknown

38. Police Reported Drug Evaluation Classification (DEC) Test For Driver 0

- (0) No DEC process available or given
 (1) DEC process given, results known
 (2) DEC process given, results unknown
 (3) DEC process available, unknown if given
 (8) No driver present

39. Other Drug Specimen Test Type For Driver 0

- (0) No specimen test given
 (1) Blood test
 (2) Urine test
 (3) Other specimen tests (specify):

 (7) Unspecified specimen test
 (8) No driver present
 (9) Unknown if specimen test given

DRUG EVALUATION CLASSIFICATION

OTHER DRUGS TEST RESULTS FOR DRIVER

	DEC Test Results	Specimen Test Results
Narcotic Drug	40. <u>0</u>	41. <u>0</u>
Depressant Drug	42. <u>0</u>	43. <u>0</u>
Stimulant Drug	44. <u>0</u>	45. <u>0</u>
Hallucinogen Drug	46. <u>0</u>	47. <u>0</u>
Cannabinoid Drug	48. <u>0</u>	49. <u>0</u>
Phencyclidine (PCP)	50. <u>0</u>	51. <u>0</u>
Inhalant Drug	52. <u>0</u>	53. <u>0</u>
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. <u>0</u>	55. <u>0</u>

Codes For DEC Test Results

- (0) No DEC test given
 (1) Passed DEC test
 (2) Failed DEC test
 (3) DEC test given—results unknown
 (8) No driver present
 (9) Unknown if DEC test given

Codes for Specimen Test Results

- (0) No specimen test given
 (1) Drug not found in specimen
 (2) Drug found in specimen
 (7) Specimen test given, results unknown or
 not obtained
 (8) No driver present
 (9) Unknown if specimen test given

OTHER DATA

56. Driver's Zip Code

- (00000) Driver not present
 (00001) Driver not a resident of U.S. or territories
 _____ Code actual 5-digit zip code
 (99999) Unknown

57. Driver's Race/Ethnic Origin

- (0) Driver not present
 (1) White (non-Hispanic)
 (2) Black (non-Hispanic)
 (3) White (Hispanic)
 (4) Black (Hispanic)
 (5) American Indian, Eskimo or Aleut
 (6) Asian or Pacific Islander
 (8) Other (specify): _____
 (9) Unknown

58. Vehicle Special Use (This Trip)

- (0) No special use
 (1) Taxi
 (2) Vehicle used as school bus
 (3) Vehicle used as other bus
 (4) Military
 (5) Police
 (6) Ambulance
 (7) Fire truck or car
 (8) Other (specify): _____
 (9) Unknown

ROLLOVER DATA

If GV07 (Body Type) \neq 1-49, leave GV59-GV63 blank.
 If GV24 (Rollover) = 0, then GV59-GV63 must equal 0.
 If GV24 = 9, then GV59-GV63 must equal 9.

59. Rollover Initiation Type

- (0) No rollover
 (1) Trip-over
 (2) Flip-over
 (3) Turn-over
 (4) Climb-over
 (5) Fall-over
 (6) Bounce-over
 (7) Collision with another vehicle
 (8) Other rollover initiation type specify): _____
 (9) Unknown rollover initiation type

60. Location of Rollover Initiation

- (0) No rollover
 (1) On roadway
 (2) On shoulder—paved
 (3) On shoulder—unpaved
 (4) On roadside or divided trafficway median
 (9) Unknown

61. Rollover Initiation Object Contacted

62. Location on Vehicle Where Initial Principal Tripping Force Is Applied

- (0) No rollover
 (1) Wheels/tires
 (2) Side plane
 (3) End plane
 (4) Undercarriage
 (5) Other location on vehicle (specify): _____
 (8) Non-contact rollover forces (specify): _____
 (9) Unknown

63. Direction of Initial Roll

- (0) No rollover
 (1) Roll right - primarily about the longitudinal axis
 (2) Roll left - primarily about the longitudinal axis
 (5) End-over-end (i.e., primarily about the lateral axis)
 (9) Unknown roll direction

PRECRASH DATA

64. Pre-Event Movement (Prior to Recognition of Critical Event)

- (01) Going straight
 (02) Slowing or stopping in traffic lane
 (03) Starting in traffic lane
 (04) Stopped in traffic lane
 (05) Passing or overtaking another vehicle
 (06) Disabled or parked in travel lane
 (07) Leaving a parking position
 (08) Entering a parking position
 (09) Turning right
 (10) Turning left
 (11) Making a U-turn
 (12) Backing up (other than for parking position)
 (13) Negotiating a curve
 (14) Changing lanes
 (15) Merging
 (16) Successful avoidance maneuver to a previous critical event
 (97) Other (specify): _____
 (98) No driver present
 (99) Unknown

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

- (00) No rollover
- (01-30) — Vehicle Number

Noncollision

- (31) Turn-over — fall-over
- (33) Jackknife

Collision With Fixed Object

- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment

- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)
- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail)
(specify): _____

- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): _____

- (69) Unknown fixed object

Collision with Nonfixed Object

- (71) Motor vehicle not in-transport
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (88) Other nonfixed object (specify): _____

- (89) Unknown nonfixed object

- (98) Other event (specify): _____

- (99) Unknown event or object

PRECRASH DATA (Continued)**65. Critical Precrash Event**50*This Vehicle Loss of Control Due To:*

- (01) Blow out or flat tire
- (02) Stalled engine
- (03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
- (04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
- (05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
- (06) Traveling too fast for conditions
- (08) Other cause of control loss (specify): _____
- (09) Unknown cause of control loss

This Vehicle Traveling

- (10) Over the lane line on left side of travel lane
- (11) Over the lane line on right side of travel lane
- (12) Off the edge of the road on the left side
- (13) Off the edge of the road on the right side
- (14) End departure
- (15) Turning left at intersection
- (16) Turning right at intersection
- (17) Crossing over (passing through) intersection
- (19) Unknown travel direction

Other Motor Vehicle In Lane

- (50) Stopped
- (51) Traveling in same direction with lower speed (i.e., lower steady speed or decelerating)
- (52) Traveling in same direction with higher speed
- (53) Traveling in opposite direction
- (54) In crossover
- (55) Backing
- (59) Unknown travel direction of other motor vehicle in lane

Other Motor Vehicle Encroaching Into Lane

- (60) From adjacent lane (same direction)—over left lane line
- (61) From adjacent lane (same direction)—over right lane line
- (62) From opposite direction—over left lane line
- (63) From opposite direction—over right lane line
- (64) From parking lane
- (65) From crossing street, turning into same direction
- (66) From crossing street, across path
- (67) From crossing street, turning into opposite direction
- (68) From crossing street, intended path not known
- (70) From driveway, turning into same direction
- (71) From driveway, across path
- (72) From driveway, turning into opposite direction
- (73) From driveway, intended path not known
- (74) From entrance to limited access highway
- (78) Encroachment by other vehicle—details unknown

Pedestrian or Pedalcyclist, or Other Nonmotorist

- (80) Pedestrian in roadway
- (81) Pedestrian approaching roadway
- (82) Pedestrian - unknown location
- (83) Pedalcyclist or other nonmotorist in roadway (specify): _____
- (84) Pedalcyclist or other nonmotorist approaching roadway (specify): _____
- (85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

Object or Animal

- (87) Animal in roadway
- (88) Animal approaching roadway
- (89) Animal—unknown location
- (90) Object in roadway
- (91) Object approaching roadway
- (92) Object—unknown location
- (98) Other critical precrash event (specify): _____
- (99) Unknown

For Corrective Actions Attempted see variable GV14
(Attempted Avoidance Maneuver)

66. Precrash Stability After Avoidance Maneuver1

- (0) No avoidance maneuver
- (1) Tracking
- (2) Skidding longitudinally—rotation less than 30 degrees
- (3) Skidding laterally—clockwise rotation
- (4) Skidding laterally—counterclockwise rotation
- (7) Other vehicle loss-of-control (specify): _____
- (8) No driver present
- (9) Precrash stability unknown

67. Precrash Directional Consequences of Avoidance Maneuver (Corrective Action)1

- (0) No avoidance maneuver
- (1) Vehicle stayed in travel lane where avoidance maneuver was initiated
- (2) Vehicle stayed on roadway but left travel lane where avoidance maneuver was initiated
- (3) Vehicle stayed on roadway, not known if left travel lane where avoidance maneuver was initiated
- (4) Vehicle departed roadway
- (5) Avoidance maneuver initiated off roadway
- (8) No driver present
- (9) Directional consequences unknown

*** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), ***
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

*** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE ***
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number	3. Vehicle Number
2. Case Number - Stratum <u>93-07</u>	<u>01</u>

VEHICLE IDENTIFICATION

VIN YV1L55500P2 Model Year 93
Vehicle Make (specify): VOLVO Vehicle Model (specify): 850 GLE

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
1	BUMPER + GRILLE AREA DIRECT - 96.5cm IN LENGTH, BEGAN 18.4cm RIGHT OF CENTER	FULL WIDTH OF GRILLE

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]

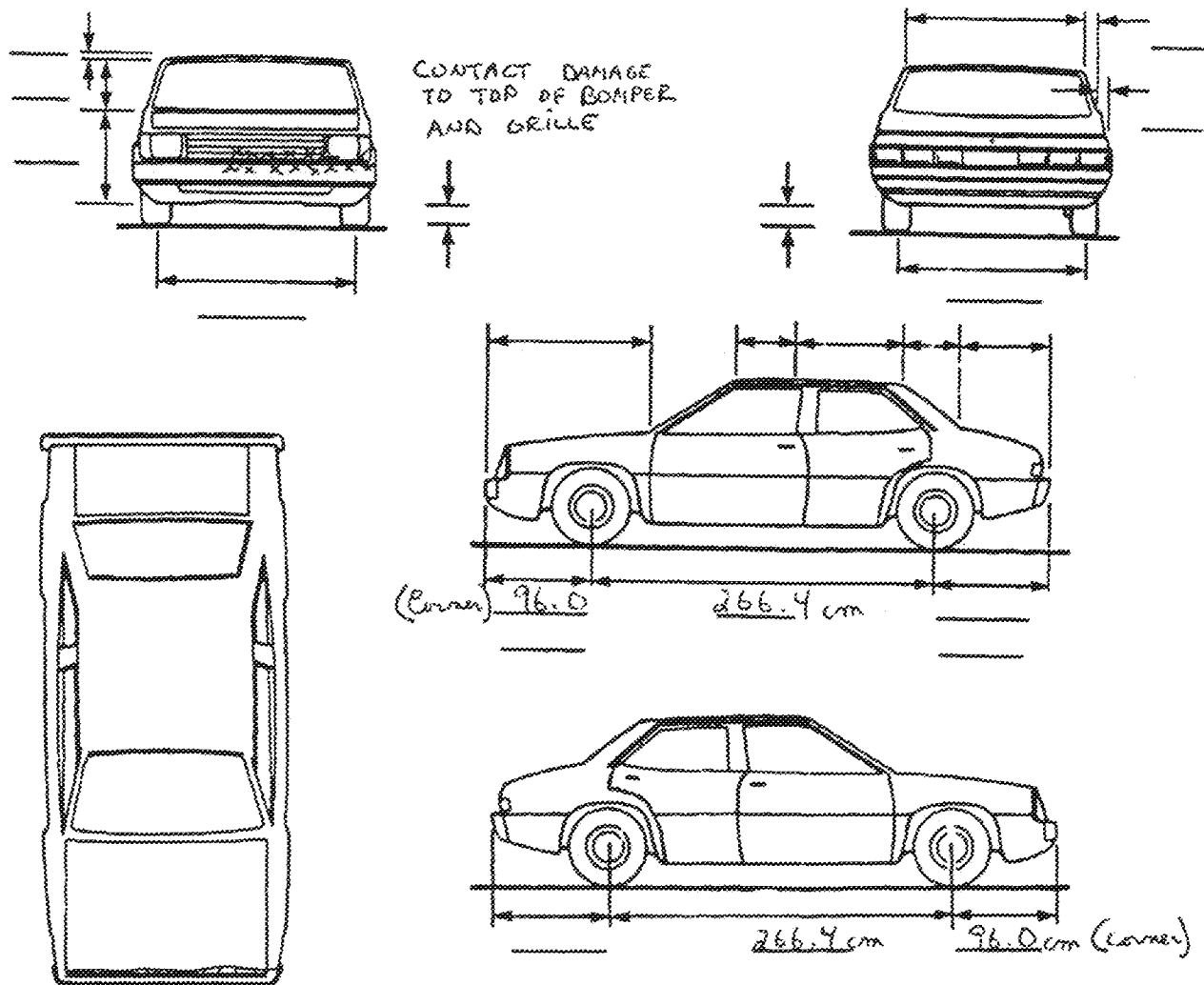
ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase	<u>104.3</u>	inches	x 2.54 =	<u>265</u> cm
Overall Length	<u>183.5</u>	inches	x 2.54 =	<u>466</u> cm
Maximum Width	<u>69.3</u>	inches	x 2.54 =	<u>176</u> cm
Curb Weight	<u>3,187</u>	pounds	x .4536 =	<u>1,446</u> kg
Average Track	<u>58.9</u>	inches	x 2.54 =	<u>150</u> cm
Front Overhang	___	inches	x 2.54 =	___ cm
Rear Overhang	___	inches	x 2.54 =	___ cm
Undeformed End Width	___	inches	x 2.54 =	___ cm
Engine Size: cyl./displ.	___	cc	x .001 =	___ L
	<u>149</u>	CID	x .0164 =	<u>2.4</u> L

VEHICLE DAMAGE SKETCH

TIRE--WHEEL DAMAGE a. Rotation physically restricted RF <u>2</u> LF <u>2</u> RR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		ORIGINAL SPECIFICATIONS Wheelbase <u>265</u> cm Overall Length <u>466</u> cm Maximum Width <u>176</u> cm Curb Weight <u>1446</u> kg Average Track <u>150</u> cm Front Overhang _____ cm Rear Overhang _____ cm Undeformed End Width _____ cm Engine Size: cyl./displ. <u>2.4</u> L		WHEEL STEER ANGLES (For locked front wheels or displaced rear axles only) RF \pm _____ ° LF \pm _____ ° RR \pm _____ ° LR \pm _____ ° Within ± 5 degrees
TYPE OF TRANSMISSION <input type="checkbox"/> Manual <input checked="" type="checkbox"/> Automatic		DRIVE WHEELS <input checked="" type="checkbox"/> FWD <input type="checkbox"/> RWD <input type="checkbox"/> 4WD Approximate Cargo Weight _____ kg		

MEASUREMENTS IN CENTIMETERS



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED

{01-30} --- Vehicle Number

Noncollision

- (31) Overturn — rollover
(32) Fire or explosion
(33) Jackknife
(34) Other intraunit damage (specify):

(35) Noncollision injury

(38) Other noncollision (specify):

(39) Noncollision — details unknown

Collision With Fixed Object

- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

- (50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

- (54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail)
(specify):

- (57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

(69) Unknown fixed object

Collision with Nonfixed Object

- (71) Motor vehicle not in-transport
(72) Pedestrian
(73) Cyclist or cycle
(74) Other nonmotorist or conveyance

(75) Vehicle occupant

(76) Animal

(77) Train

(78) Trailer, disconnected in transport

(88) Other nonfixed object (specify):

(89) Unknown nonfixed object

(98) Other event (specify):

(99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

[illegible]

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>01</u>	5. <u>02</u>	6. <u>1 2</u>	7. <u>F</u>	8. <u>Y</u>	9. <u>E</u>	10. <u>W</u>	11. <u>01</u>

Second Highest Delta "V"

12. _____	13. _____	14. _____	15. _____	16. _____	17. _____	18. _____	19. _____
-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

20. <u>L</u>	21. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	22. <u>±D</u>
<u>150</u>	<u>004</u>	<u>006</u>	<u>006</u>	<u>001</u>	<u>000</u>	<u>000</u>	<u>+ 034</u>

Second Highest Delta "V"

23. <u>L</u>	24. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	25. <u>±D</u>
_____	_____	_____	_____	_____	_____	_____	<u>+</u> <u>-</u>

26. Are CDCs Documented but Not Coded on The Automated File? 0
(0) No
(1) Yes

27. Researcher's Assessment of Vehicle Disposition 0
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

28. Original Wheelbase 265
Code to the nearest centimeter
(999) Unknown

PER SPECS

108.3 inches X 2.54 = 265 centimeters

29. Is This A Multi-Stage Manufactured Vehicle
And/Or A Certified Altered Vehicle? 0

- (0) No post manufacturer modifications
(1) Yes - post manufacturer modifications
(specify): _____

(Include photograph of CERTIFICATION
PLACARD in case report)

- (9) Unknown if vehicle is modified

30. Fire Occurrence 0

- (0) No fire

Yes, fire occurred

- (1) Minor
(2) Major
(9) Unknown

31. Origin of Fire 0

- (0) No fire
(1) Vehicle exterior (front, side, back, top)
(2) Exhaust system
(3) Fuel tank (and other fuel retention
system parts)
(4) Engine compartment
(5) Cargo/trunk compartment
(6) Instrument panel
(7) Passenger compartment area
(8) Other location (specify): _____
(9) Unknown

32. Type of Fuel Tank L

- (0) No fuel tank (electrical vehicle)
(1) Metallic
(2) Non-metallic
(9) Unknown

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED AND WAS NOT AN AOPS ***
(I.E., GV09=0 OR 9 AND GV36=0), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.

U.S. Department of Transportation
National Highway Traffic Safety
Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - Stratum

93-07

3. Vehicle Number

01

INTEGRITY

4. Passenger Compartment Integrity

(00) No integrity loss

00

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (back door)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window (backlight)

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window (side window and backlight)

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 1 8. RR 1 9. TG/H 0

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 = 2, Then code 0

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 2 16. LF 0 17. RF 0 18. LR 0 19. RR 0

20. BL 0 21. Roof 8 22. Other 8

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 1 24. LF 0 25. RF 0 26. LR 0 27. RR 0

28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact

(5) Glazing out-of-place by occupant contact and holed by occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage And No Occupant Contact or No Glazing, Then Code IV31 Through IV46 As 0

Type of Window/Windshield Glazing

31. WS 1 32. LF 2 33. RF 2 34. LR 2 35. RR 2

36. BL 2 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 - Laminated

(2) AS-2 - Tempered

(3) AS-3 - Tempered-tinted

(4) AS-14 - Glass/Plastic

(8) Other (specify):

(9) Unknown

Window Precrash Glazing Status

39. WS 1 40. LF 2 41. RF 2 42. LR 2 43. RR 2

44. BL 1 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

(2) Closed

(3) Partially opened

(4) Fully opened

(9) Unknown

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

INTRUDING COMPONENT

Interior Components

- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A (A1/A2)-pillar
- (07) B-pillar NO INTRUSION
- (08) C-pillar
- (09) D-pillar
- (10) Door panel (side)
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan (includes sill)
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back door/panel (e.g., tailgate)
- (26) Other interior component (specify):

- (27) Side panel - forward of the A (A2)-pillar
- (28) Side panel - rear of the A (A2)-pillar

Exterior Components

- (30) Hood
- (31) Outside surface of this vehicle (specify):
- (32) Other exterior object in the environment (specify):
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify):
- (99) Unknown

LOCATION OF INTRUSION

- Front Seat
- (11) Left
- (12) Middle
- (13) Right

- Second Seat
- (21) Left
- (22) Middle
- (23) Right

- Third Seat
- (31) Left
- (32) Middle
- (33) Right

- Fourth Seat
- (41) Left
- (42) Middle
- (43) Right

- (97) Catastrophic
- (98) Other enclosed area (specify)

- (99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 3 centimeters but < 8 centimeters
- (2) ≥ 8 centimeters but < 15 centimeters
- (3) ≥ 15 centimeters but < 30 centimeters
- (4) ≥ 30 centimeters but < 46 centimeters
- (5) ≥ 46 centimeters but < 61 centimeters
- (6) ≥ 61 centimeters
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

National Accident Sampling System-Crashworthiness Data System: Interior Vehicle Form

Page 3

STEERING COLUMN87. Steering Column Type 4

- (1) Fixed column
 (2) Tilt column
 (3) Telescoping column
 (4) Tilt and telescoping column
 (8) Other column type (specify): _____
 (9) Unknown

88. Blank X X

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.)

89. Blank X X X

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.)

90. Blank X X X

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.)

91. Blank X X X

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.)

92. Steering Rim/Spoke Deformation 0 0

- Code actual measured deformation to the nearest centimeter
 (00) No steering rim deformation
 (01-14) Actual measured value in centimeters
 (15) 15 centimeters or more
 (98) Observed deformation cannot be measured
 (99) Unknown

93. Location of Steering Rim/Spoke Deformation 0 0

(00) No steering rim deformation

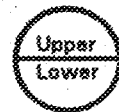
Quarter Sections

- (01) Section A
 (02) Section B
 (03) Section C
 (04) Section D



Half Sections

- (05) Upper half of rim/spoke
 (06) Lower half of rim/spoke
 (07) Left half of rim/spoke
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse
 (10) Undetermined location
 (99) Unknown

INSTRUMENT PANEL94. Odometer Reading 0 0 1,000

_____ kilometers—Code to the nearest 1,000 kilometers

- (000) No odometer
 (001) Less than 1,500 kilometers
 (500) 499,500 kilometers or more
 (999) Unknown

582 miles X 1.6093 = _____ kilometers

Source: _____

95. Instrument Panel Damage from Occupant Contact? 0

- (0) No
 (1) Yes
 (9) Unknown

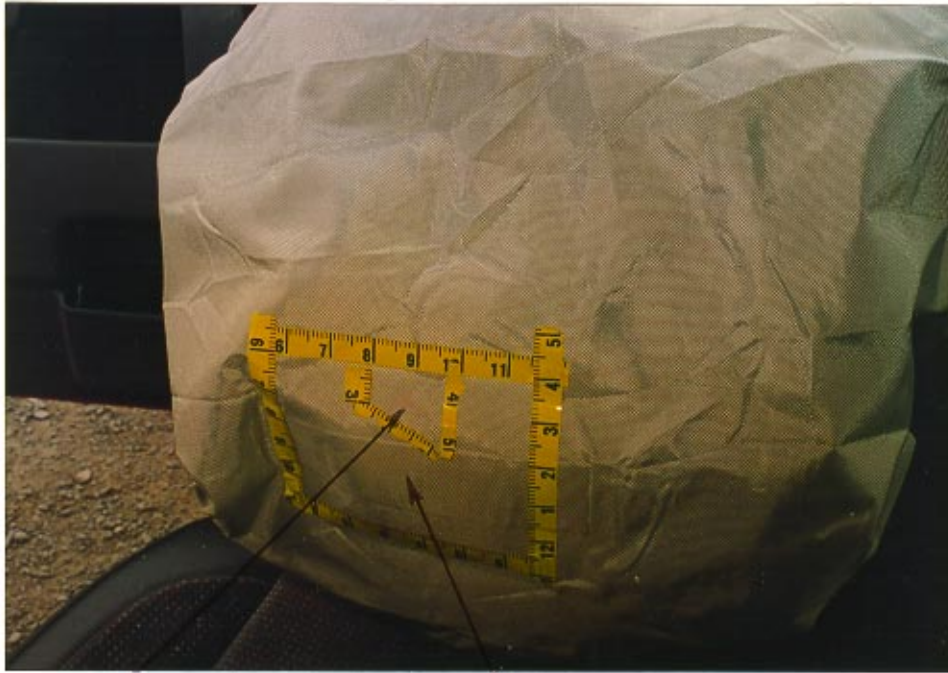
96. Knee Bolsters Deformed from Occupant Contact? 0

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

97. Did Glove Compartment Door Open During Collision(s)? 0

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

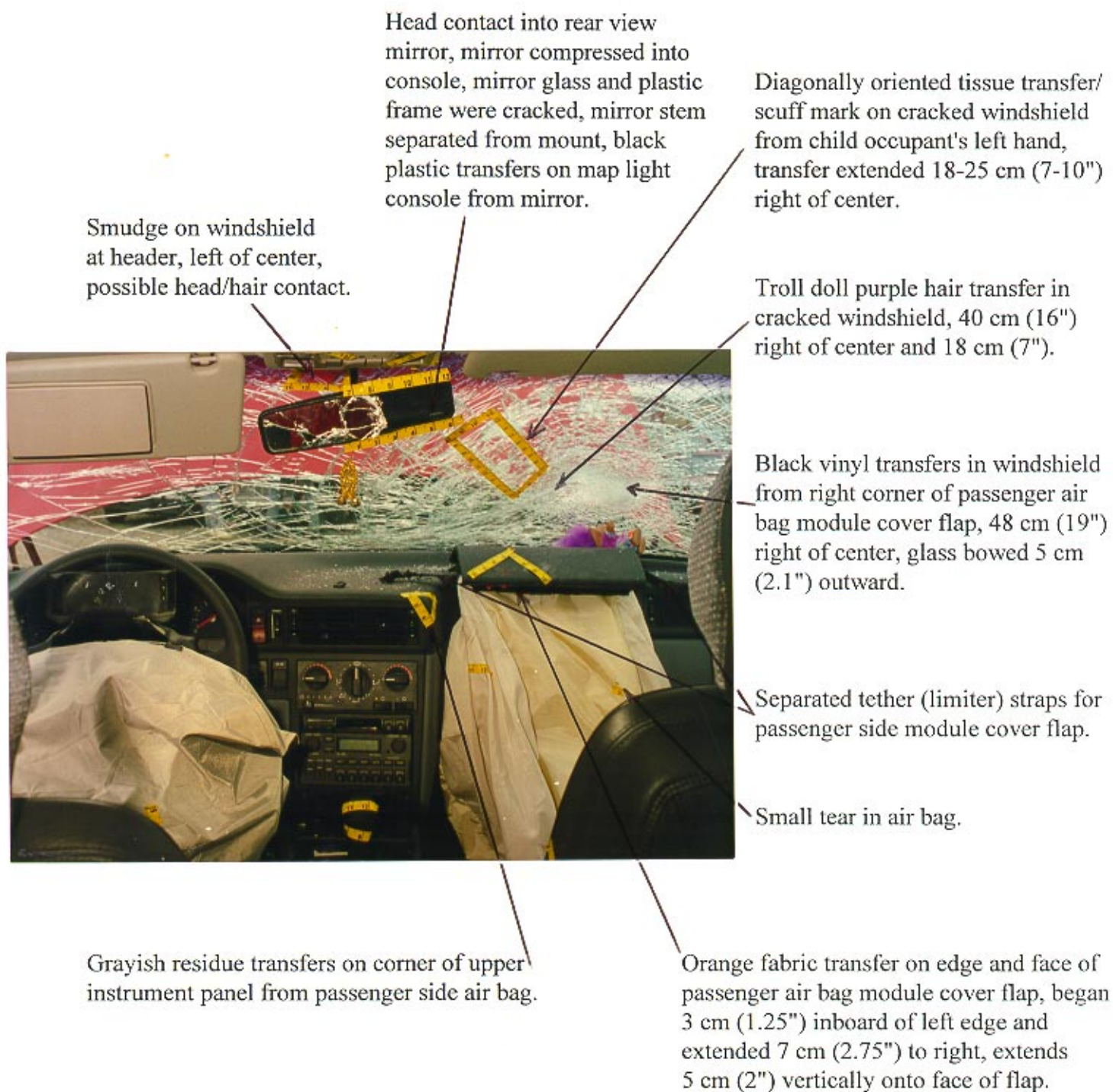
Driver Facial Contact Evidence on Air Bag



Lipstick transfer on driver's side air bag
4-6 cm (1.5 - 2.5") above the centerline,
extends 0.6 cm (0.25") right of center to
3 cm (1.25") left of center

Skin-toned makeup transfer below the
lipstick transfer, extends 4 cm (1.5")
left of center to 2.5 cm (1") right of
center and 0-4 cm (0-1.5") above the
horizontal centerline

Child Occupant Contact Points



POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	45	1	FACE	LIPSTICK TRANSFER	1
B	45	1	FACE	MAKEUP TRANSFER	1
C	17	2	① ARM/TORSO	ORANGE FABRIC TRANSFER	1
D	01	2	② HAND	TISSUE / SCUFF	1
E	01	2	HEAD	SMUDGE	2
F	02/50	2	HEAD	CRACKED / DISPLACED MIRROR	1
G	01	2	—	CRACKED, MODULE COVER FLAP	1
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify): _____
- (19) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar

(23) Left B-pillar

(24) Other left pillar (specify): _____

(25) Left side window glass or frame

(26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.

(27) Other left side object (specify): _____

(28) Left side window sill

RIGHT SIDE

(30) Right side interior surface, excluding hardware or armrests

(31) Right side hardware or armrest

(32) Right A (A1/A2)-pillar

(33) Right B-pillar

(34) Other right pillar (specify): _____

(35) Right side window glass or frame

(36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B pillar, or roof side rail.

(37) Other right side object (specify): _____

(38) Right side window sill

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)

(46) Other occupants (specify): _____

(47) Interior loose objects

(48) Child safety seat (specify): _____

(49) Other interior object (specify): _____

ROOF

(50) Front header

(51) Rear header

(52) Roof left side rail

(53) Roof right side rail

(54) Roof or convertible top

FLOOR

(55) Floor (including toe pan)

(57) Floor or console mounted transmission lever, including console

(58) Parking brake handle

(59) Foot controls including parking brake

REAR

(60) Backlight (rear window)

(61) Backlight storage rack, door, etc.

(62) Other rear object (specify): _____

CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Left	Right
F I R S T	Availability/Function		
	Deployment		
	Failure		

Air Bag System Availability/Function

- (0) Not equipped/not available
(1) Air bag

Non-functional

- (2) Air bag disconnected (specify):

(3) Air bag not reinstalled
(9) Unknown

Air Bag System Deployment

- (0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

Did Air Bag System Fail?

- (0) Not equipped/not available
(1) No
(2) Yes (specify):

(9) Unknown

AUTOMATIC BELTS

		Left	Right
F I R S T	Availability/Function	0	0
	Use	0	0
	Type	0	0
	Proper Use	0	0
	Failure Modes	0	0

Automatic (Passive) Belt System Availability/Function

- (0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
(9) Unknown

Automatic (Passive) Belt System Use

- (0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)
(3) Automatic belt use unknown
(9) Unknown

Automatic (Passive) Belt System Type

- (0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

Proper Use of Automatic (Passive) Belt System

- (0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):

(9) Unknown

Automatic (Passive) Belt Failure Modes During Accident

- (0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):

(8) Other automatic belt failure (specify):

(9) Unknown

National Accident Sampling System-Crashworthiness Data System: Interior Vehicle Form

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MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a Child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	-	4
	Use	00	-	00
	Failure Modes	0	-	0
SECOND	Availability	4	4	4
	Use	-	-	-
	Failure Modes	-	-	-
THIRD	Availability	X		
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available - type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown

Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperable (specify): _____
- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used - type unknown

(08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat - type unknown
- (18) Other belt used with child safety seat (specify): _____
- (99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____
- (6) Broken retractor
- (7) Combination of above (specify): _____
- (8) Other manual belt failure (specify): _____
- (9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

- (00) No child safety seat

Designed for Rear Facing for This Age/Weight

- (01) Rear facing
- (02) Forward facing
- (08) Other orientation (specify):

- (09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

- (19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

- (29) Unknown orientation

- (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage**4. Child Safety Seat Shield Usage****5. Child Safety Seat Tether Usage**

Note: Options Below Are Used for Variables 3-5.

- (00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	-	3
	Seat Type	01	-	01
	Seat Performance	1	-	1
	Seat Orientation	1	-	1
SECOND	Head Restraint Type/Damage	3	3	3
	Seat Type	05	05	05
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			

Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral — no damage
- (2) Integral — damaged during accident
- (3) Adjustable — no damage
- (4) Adjustable — damaged during accident
- (5) Add-on — no damage
- (6) Add-on — damaged during accident
- (8) Other Specify: _____

(9) Unknown

Seat Type (this Occupant Position)

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify): _____

(10) Box mounted seat (i.e., van type)

(99) Unknown

Seat Performance (this Occupant Position)

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed specify: _____
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____

(7) Combination of above (specify): _____

(8) Other (specify): _____

(9) Unknown

Seat Orientation (this Occupant Position)

- (0) Occupant not seated or no seat
- (1) Forward facing seat
- (2) Rear facing seat
- (3) Side facing seat (inward)
- (4) Side facing seat (outward)
- (8) Other (specify): _____

(9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

VEHICLE #2

1986 Volkswagen Golf



GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - Stratum

93-07

3. Vehicle Number

02

VEHICLE IDENTIFICATION

4. Vehicle Model Year

86

Code the last two digits of the model year
(99) Unknown

5. Vehicle Make (specify):

VOLKSWAGEN

30

Applicable codes are found in your
NASS Data Collection, Coding and
Editing Manual.
(99) Unknown

6. Vehicle Model (specify):

GOLF

042

Applicable codes are found in your
NASS Data Collection, Coding and
Editing Manual.
(999) Unknown

7. Body Type

05

Note: Applicable codes may be found on
the back of this page.

8. Vehicle Identification Number

1VWEG01776V

Left justify; Slash zeros and letter Z (0 and Z)
No VIN—Code all zeros
Unknown—Code all nine's

OFFICIAL RECORDS

9. Police Reported Vehicle Disposition

(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

0

10. Police Reported Travel Speed

000

Code to the nearest kph (NOTE: 000 means
less than 0.5 kph)
(160) 159.5 kph and above
(999) Unknown

STOPPED

mph X 1.6093 = kph

11. Police Reported Alcohol Presence

(0) No alcohol present
(1) Yes (alcohol present)
(7) Not reported
(8) No driver present
(9) Unknown

0

Note: See variables 37 through 55
(Page 4) for information on Other Drugs

12. Alcohol Test Result For Driver

Code actual value (decimal implied
before first digit—0.xx)
(95) Test refused
(96) None given
(97) AC test performed, results unknown
(98) No driver present
(99) Unknown

96

Source:

ACCIDENT RELATED

13. Speed Limit

(000) No statutory limit
Code posted or statutory speed limit
in kph
(999) Unknown

056

35 mph X 1.6093 = 056 kph

14. Attempted Avoidance Maneuver

(00) No impact
(01) No avoidance actions
(02) Braking (no lockup)
(03) Braking (lockup)
(04) Braking (lockup unknown)
(05) Releasing brakes
(06) Steering left
(07) Steering right
(08) Braking and steering left
(09) Braking and steering right
(10) Accelerating
(11) Accelerating and steering left
(12) Accelerating and steering right
(97) No driver present
(98) Other action (specify):

01

(99) Unknown

15. Accident Type

Applicable codes may be found on the
back of page two of this field form
(00) No impact
Code the number of the diagram that
best describes the accident circumstance
(98) Other accident type (specify):

21

(99) Unknown

**** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ****

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (07) Hatchback, number of doors unknown
- (08) Other automobile type (specify): _____
- (09) Unknown automobile type

Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
- (11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
- (12) Large limousine - more than four side doors or stretched chassis
- (13) Three-wheel automobile or automobile derivative

Utility Vehicles ($\leq 4,500$ kgs GVWR)

- (14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [78 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Samurai, Sidekick, Rocky)
- (15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Landcruiser, Rover, Scout)
- (16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
- (19) Utility, unknown body type

Van Based Light Trucks ($\leq 4,500$ kgs GVWR)

- (20) Minivan (Chrysler Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Dodge/Plymouth Vista, Aerostar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Vanagon/Camper.)
- (21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vendura.)
- (22) Step van or walk-in van ($\leq 4,500$ kgs GVWR)
- (23) Van based motorhome ($\leq 4,500$ kgs GVWR)
- (24) Van based school bus ($\leq 4,500$ kgs GVWR)
- (25) Van based other bus ($\leq 4,500$ kgs GVWR)
- (26) Other van type (Hi-Cube Van, Kary) (specify): _____
- (29) Unknown van type

Light Conventional Trucks (Pickup style cab, $\leq 4,500$ kgs GVWR)

- (30) Compact pickup (D60, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10, T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
- (31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500.)

- (32) Pickup with slide-in camper
- (33) Convertible pickup
- (39) Unknown pickup style light conventional truck type

Other Light Trucks ($\leq 4,500$ kgs GVWR)

- (40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (45) Other light conventional truck type
- (48) Unknown light truck type
- (49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): _____
- (59) Unknown bus type

Medium/Heavy Trucks ($> 4,500$ kgs GVWR)

- (60) Step van ($> 4,500$ kgs GVWR)
- (61) Single unit straight truck (4,500 kgs $<$ GVWR \leq 8,850 kgs)
- (62) Single unit straight truck (8,850 kgs $<$ GVWR \leq 12,000 kgs)
- (63) Single unit straight truck ($> 12,000$ kgs GVWR)
- (64) Single unit straight truck, GVWR unknown
- (65) Medium/heavy truck based motorhome
- (67) Truck-tractor with no cargo trailer
- (68) Truck-tractor pulling one trailer
- (69) Truck-tractor pulling two or more trailers
- (70) Truck-tractor (unknown if pulling trailer)
- (78) Unknown medium/heavy truck type
- (79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (80) Motorcycle
- (81) Moped (motorized bicycle)
- (82) Three-wheel motorcycle or moped
- (88) Other motored cycle (minibike, motorscooter) (specify): _____
- (89) Unknown motored cycle type

Other Vehicles

- (90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (91) Snowmobile
- (92) Farm equipment other than trucks
- (93) Construction equipment other than trucks
- (97) Other vehicle type
- (99) Unknown body type

OCCUPANT RELATED

16. Driver Presence in Vehicle 1
 (0) Driver not present
 (1) Driver present
 (9) Unknown
17. Number of Occupants This Vehicle 01
 (00-96) Code actual number of occupants for this vehicle
 (97) 97 or more
 (99) Unknown
18. Number of Occupant Forms Submitted 01

24. Rollover 0
 (0) No rollover (no overturning)
- Rollover (primarily about the longitudinal axis)*
 (1) Rollover, 1 quarter turn only
 (2) Rollover, 2 quarter turns
 (3) Rollover, 3 quarter turns
 (4) Rollover, 4 or more quarter turns (specify):

- (5) Rollover--end-over-end (i.e., primarily about the lateral axis)
 (9) Rollover (overturn), details unknown

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight 1,000
 _____ Code weight to nearest 10 kilograms.
 (045) Less than 450 kilograms
 (610) 6,100 kilograms or more
 (999) Unknown
02,150 lbs X .4536 = 0,975 kgs
 Source: _____
20. Vehicle Cargo Weight 0,000
 _____ Code weight to nearest 10 kilograms.
 (000) Less than 5 kilograms
 (450) 4,500 kilograms or more
 (999) Unknown
 _____ lbs X .4536 = _____ kgs

OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this Vehicle) 0
26. Rear Override/Underride (this Vehicle) 1
 (0) No override/underride, or not an end-to-end impact
- Override (see specific CDC)*
 (1) 1st CDC
 (2) 2nd CDC
 (3) Other not automated CDC (specify):

- Underride (see specific CDC)*
 (4) 1st CDC
 (5) 2nd CDC
 (6) Other not automated CDC (specify):

- (7) Medium/heavy truck or bus override
 (9) Unknown

RECONSTRUCTION DATA

21. Towed Trailing Unit 0
 (0) No towed unit
 (1) Yes--towed trailing unit
 (9) Unknown
22. Documentation of Trajectory Data for This Vehicle 0
 (0) No
 (1) Yes
23. Post Collision Condition of Tree or Pole (For Highest Delta V) 0
 (0) Not collision (for highest delta V) with tree or pole
 (1) Not damaged
 (2) Cracked/sheared
 (3) Tilted <45 degrees
 (4) Tilted ≥45 degrees
 (5) Uprooted tree
 (6) Separated pole from base
 (7) Pole replaced
 (8) Other (specify):

 (9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value
 (997) Noncollision
 (998) Impact with object
 (999) Unknown

27. Heading Angle For This Vehicle 084
28. Heading Angle For Other Vehicle 085

National Accident Sampling System-Crashworthiness Data System: General Vehicle Form

Page 3

29. Basis for Total Delta V (highest) 2*Delta V Calculated*

- (1) CRASH program—damage only routine
- (2) CRASH program—damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique, regardless of adequacy of damage data.
- (6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

30. Total Delta V

Secondary Highest

17 Nearest kph

(NOTE: 000 means less than
0.5 kph)
(160) 159.5 kph and above
(999) Unknown

31. Longitudinal Component of
Delta V+ 017

Nearest kph

(NOTE: 000 means greater than
-0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(999) Unknown

32. Lateral Component of Delta V

Secondary Highest

Nearest kph

(NOTE: 000 means greater than
-0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(999) Unknown

33. Energy Absorption

14500 Nearest 100 joules

(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

34. Confidence In Reconstruction Program
Results (For Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model — results appear reasonable
- (2) Collision fits model — results appear high
- (3) Collision fits model — results appear low
- (4) Borderline reconstruction — results appear reasonable

35. Type of Vehicle Inspection

- (0) No inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes - researcher determined
- (2) VIN determined air bag system
- (3) VIN determined automatic (passive) belts
- (4) VIN determined air bag and automatic (passive) belts

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [] YES [] NO

IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [] YES [] NO

37. Police Reported Other Drug Presence 0

- (0) No other drugs present
- (1) Yes (other drug present)
- (7) Not reported
- (8) No driver present
- (9) Unknown

38. Police Reported Drug Evaluation Classification (DEC) Test For Driver 0

- (0) No DEC process available or given
- (1) DEC process given, results known
- (2) DEC process given, results unknown
- (3) DEC process available, unknown if given
- (8) No driver present

39. Other Drug Specimen Test Type For Driver 0

- (0) No specimen test given
- (1) Blood test
- (2) Urine test
- (3) Other specimen tests (specify): _____
- (7) Unspecified specimen test
- (8) No driver present
- (9) Unknown if specimen test given

DRUG EVALUATION CLASSIFICATION

OTHER DRUGS TEST RESULTS FOR DRIVER

	DEC Test Results	Specimen Test Results
Narcotic Drug	40. <u>0</u>	41. <u>0</u>
Depressant Drug	42. <u>0</u>	43. <u>0</u>
Stimulant Drug	44. <u>0</u>	45. <u>0</u>
Hallucinogen Drug	46. <u>0</u>	47. <u>0</u>
Cannabinoid Drug	48. <u>0</u>	49. <u>0</u>
Phencyclidine (PCP)	50. <u>0</u>	51. <u>0</u>
Inhalant Drug	52. <u>0</u>	53. <u>0</u>
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. <u>0</u>	55. <u>0</u>

Codes For DEC Test Results

- (0) No DEC test given
- (1) Passed DEC test
- (2) Failed DEC test
- (3) DEC test given—results unknown
- (8) No driver present
- (9) Unknown if DEC test given

Codes for Specimen Test Results

- (0) No specimen test given
- (1) Drug not found in specimen
- (2) Drug found in specimen
- (7) Specimen test given, results unknown or not obtained
- (8) No driver present
- (9) Unknown if specimen test given

OTHER DATA

56. Driver's Zip Code

- (00000) Driver not present
 (00001) Driver not a resident of U.S. or territories
 _____ Code actual 5-digit zip code
 (99999) Unknown

57. Driver's Race/Ethnic Origin

- (0) Driver not present
 (1) White (non-Hispanic)
 (2) Black (non-Hispanic)
 (3) White (Hispanic)
 (4) Black (Hispanic)
 (5) American Indian, Eskimo or Aleut
 (6) Asian or Pacific Islander
 (8) Other (specify): _____
 (9) Unknown

58. Vehicle Special Use (This Trip)

- (0) No special use
 (1) Taxi
 (2) Vehicle used as school bus
 (3) Vehicle used as other bus
 (4) Military
 (5) Police
 (6) Ambulance
 (7) Fire truck or car
 (8) Other (specify): _____
 (9) Unknown

ROLLOVER DATA

If GV07 (Body Type) \neq 1-49, leave GV59-GV63 blank.
 If GV24 (Rollover) = 0, then GV59-GV63 must equal 0.
 If GV24 = 9, then GV59-GV63 must equal 9.

59. Rollover Initiation Type

- (0) No rollover
 (1) Trip-over
 (2) Flip-over
 (3) Turn-over
 (4) Climb-over
 (5) Fall-over
 (6) Bounce-over
 (7) Collision with another vehicle
 (8) Other rollover initiation type specify): _____
 (9) Unknown rollover initiation type

60. Location of Rollover Initiation

- (0) No rollover
 (1) On roadway
 (2) On shoulder—paved
 (3) On shoulder—unpaved
 (4) On roadside or divided trafficway median
 (9) Unknown

61. Rollover Initiation Object Contacted

62. Location on Vehicle Where Initial Principal Tripping Force Is Applied

- (0) No rollover
 (1) Wheels/tires
 (2) Side plane
 (3) End plane
 (4) Undercarriage
 (5) Other location on vehicle (specify): _____
 (8) Non-contact rollover forces (specify): _____
 (9) Unknown

63. Direction of Initial Roll

- (0) No rollover
 (1) Roll right - primarily about the longitudinal axis
 (2) Roll left - primarily about the longitudinal axis
 (5) End-over-end (i.e., primarily about the lateral axis)
 (9) Unknown roll direction

PRECRASH DATA

64. Pre-Event Movement (Prior to Recognition of Critical Event)

- (01) Going straight
 (02) Slowing or stopping in traffic lane
 (03) Starting in traffic lane
 (04) Stopped in traffic lane
 (05) Passing or overtaking another vehicle
 (06) Disabled or parked in travel lane
 (07) Leaving a parking position
 (08) Entering a parking position
 (09) Turning right
 (10) Turning left
 (11) Making a U-turn
 (12) Backing up (other than for parking position)
 (13) Negotiating a curve
 (14) Changing lanes
 (15) Merging
 (16) Successful avoidance maneuver to a previous critical event
 (97) Other (specify): _____
 (98) No driver present
 (99) Unknown

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

- (00) No rollover
- (01-30) — Vehicle Number

Noncollision

- (31) Turn-over — fall-over
- (33) Jackknife

Collision With Fixed Object

- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment

- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)
- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail)
(specify): _____

- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): _____

- (69) Unknown fixed object

Collision with Nonfixed Object

- (71) Motor vehicle not in-transport
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (88) Other nonfixed object (specify): _____
- (89) Unknown nonfixed object
- (98) Other event (specify): _____
- (99) Unknown event or object

PRECRASH DATA (Continued)

65. Critical Precrash Event 52*This Vehicle Loss of Control Due To:*

- (01) Blow out or flat tire
- (02) Stalled engine
- (03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
- (04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
- (05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
- (06) Traveling too fast for conditions
- (08) Other cause of control loss (specify): _____
- (09) Unknown cause of control loss

This Vehicle Traveling

- (10) Over the lane line on left side of travel lane
- (11) Over the lane line on right side of travel lane
- (12) Off the edge of the road on the left side
- (13) Off the edge of the road on the right side
- (14) End departure
- (15) Turning left at intersection
- (16) Turning right at intersection
- (17) Crossing over (passing through) intersection
- (19) Unknown travel direction

Other Motor Vehicle In Lane

- (50) Stopped
- (51) Traveling in same direction with lower speed (i.e., lower steady speed or decelerating)
- (52) Traveling in same direction with higher speed
- (53) Traveling in opposite direction
- (54) In crossover
- (55) Backing
- (59) Unknown travel direction of other motor vehicle in lane

Other Motor Vehicle Encroaching Into Lane

- (60) From adjacent lane (same direction)—over left lane line
- (61) From adjacent lane (same direction)—over right lane line
- (62) From opposite direction—over left lane line
- (63) From opposite direction—over right lane line
- (64) From parking lane
- (65) From crossing street, turning into same direction
- (66) From crossing street, across path
- (67) From crossing street, turning into opposite direction
- (68) From crossing street, intended path not known
- (70) From driveway, turning into same direction
- (71) From driveway, across path
- (72) From driveway, turning into opposite direction
- (73) From driveway, intended path not known
- (74) From entrance to limited access highway
- (78) Encroachment by other vehicle—details unknown

Pedestrian or Pedalcyclist, or Other Nonmotorist

- (80) Pedestrian in roadway
- (81) Pedestrian approaching roadway
- (82) Pedestrian - unknown location
- (83) Pedalcyclist or other nonmotorist in roadway (specify): _____
- (84) Pedalcyclist or other nonmotorist approaching roadway (specify): _____
- (85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

Object or Animal

- (87) Animal in roadway
- (88) Animal approaching roadway
- (89) Animal—unknown location
- (90) Object in roadway
- (91) Object approaching roadway
- (92) Object—unknown location

(98) Other critical precrash event (specify): _____

(99) Unknown

For Corrective Actions Attempted see variable GV14 (Attempted Avoidance Maneuver)

66. Precrash Stability After Avoidance Maneuver 0

- (0) No avoidance maneuver
- (1) Tracking
- (2) Skidding longitudinally—rotation less than 30 degrees
- (3) Skidding laterally—clockwise rotation
- (4) Skidding laterally—counterclockwise rotation
- (7) Other vehicle loss-of-control (specify): _____
- (8) No driver present
- (9) Precrash stability unknown

67. Precrash Directional Consequences of Avoidance Maneuver (Corrective Action) 0

- (0) No avoidance maneuver
- (1) Vehicle stayed in travel lane where avoidance maneuver was initiated
- (2) Vehicle stayed on roadway but left travel lane where avoidance maneuver was initiated
- (3) Vehicle stayed on roadway, not known if left travel lane where avoidance maneuver was initiated
- (4) Vehicle departed roadway
- (5) Avoidance maneuver initiated off roadway
- (8) No driver present
- (9) Directional consequences unknown

*** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35=0), ***
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

*** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE ***
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number	_____	3. Vehicle Number	<u>02</u>
2. Case Number - Stratum	<u>93-07</u>		

VEHICLE IDENTIFICATION

VIN 1VWE01776V Model Year 86
Vehicle Make (specify): VOLKSWAGEN Vehicle Model (specify): GOLF

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
1	REAR BUMPER FACE BEGINS 31CM (1) OF CENTER, EXTENDS 105 CM TO RIGHT CORNER	FULL WIDTH OF REAR BUMPER (59.25") 150.5 CM

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]

ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase 97.3 inches x 2.54 = 247 cm

Overall Length 158.0 inches x 2.54 = 401 cm

Maximum Width 65.5 inches x 2.54 = 166 cm

Curb Weight 2,163 pounds x .4536 = 0,981 kg

Average Track 56.2 inches x 2.54 = 143 cm

Front Overhang inches x 2.54 = cm

Rear Overhang inches x 2.54 = cm

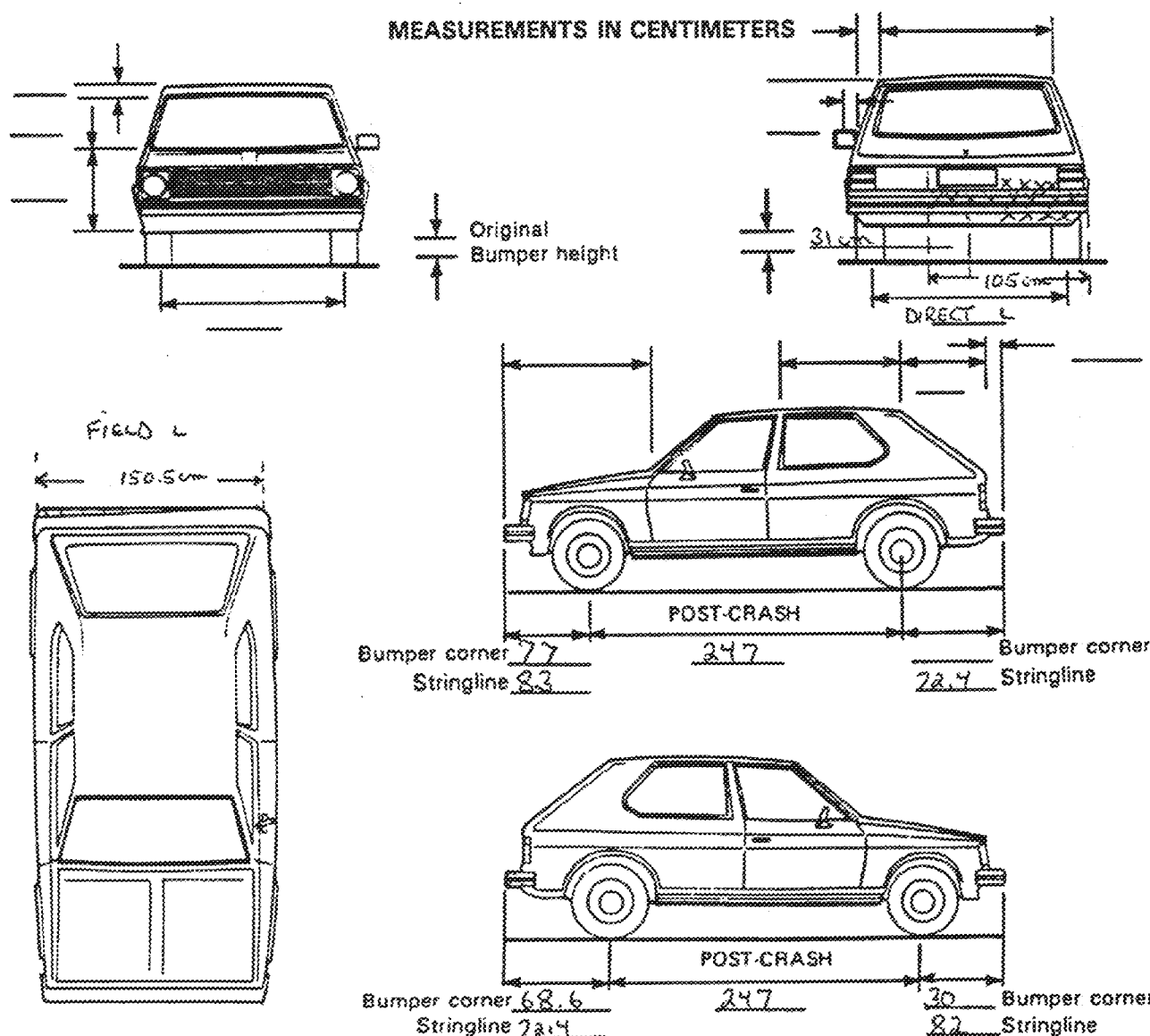
Undeformed End Width 59.3 inches x 2.54 = 151 cm

Engine Size: cyl./displ. cc x .001 = L

 97 CID x .0164 = 1.6 L

VEHICLE DAMAGE SKETCH

TIRE--WHEEL DAMAGE a. Rotation physically restricted b. Tire deflated RF <u>2</u> RF <u>2</u> LF <u>2</u> LF <u>2</u> RR <u>2</u> RR <u>2</u> LR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		ORIGINAL SPECIFICATIONS Wheelbase <u>247</u> cm Overall Length <u>401</u> cm Maximum Width <u>166</u> cm Curb Weight <u>981</u> kg Average Track <u>143</u> cm Front Overhang _____ cm Rear Overhang _____ cm Undeformed End Width <u>151</u> cm Engine Size: cyl./displ. <u>1.6</u> L		WHEEL STEER ANGLES (For locked front wheels or displaced rear axles only) RF \pm _____ ° LF \pm _____ ° RR \pm _____ ° LR \pm _____ ° Within \pm 5 degrees
TYPE OF TRANSMISSION <input checked="" type="checkbox"/> Manual <input type="checkbox"/> Automatic		DRIVE WHEELS <input checked="" type="checkbox"/> FWD <input type="checkbox"/> RWD <input type="checkbox"/> 4WD Approximate Cargo Weight <u>N/A</u> kg		



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED

{01-30} -- Vehicle Number

Noncollision

- (31) Overturn — rollover
(32) Fire or explosion
(33) Jackknife
(34) Other intraunit damage (specify):

(35) Noncollision injury

(38) Other noncollision (specify):

(39) Noncollision — details unknown

Collision With Fixed Object

- (41) Tree (≤ 10 cm in diameter)
(42) Tree (> 10 cm in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post

- (50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

- (54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail)
(specify):

- (57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

(69) Unknown fixed object

Collision with Nonfixed Object

- (71) Motor vehicle not in-transport
(72) Pedestrian
(73) Cyclist or cycle
(74) Other nonmotorist or conveyance

(75) Vehicle occupant

(76) Animal

(77) Train

(78) Trailer, disconnected in transport

(88) Other nonfixed object (specify):

(89) Unknown nonfixed object

(98) Other event (specify):

(99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

[illegible]

COLLISION DEFORMATION CLASSIFICATION**HIGHEST DELTA "V"**

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>01</u>	5. <u>01</u>	6. <u>06</u>	7. <u>B</u>	8. <u>Z</u>	9. <u>E</u>	10. <u>W</u>	11. <u>01</u>

Second Highest Delta "V"

12. _____	13. _____	14. _____	15. _____	16. _____	17. _____	18. _____	19. _____
-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

20. <u>L</u>	21. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	22. <u>±D</u>
<u>151</u>	<u>004</u>	<u>003</u>	<u>002</u>	<u>001</u>	<u>001</u>	<u>000</u>	<u>⊕</u> <u>- 023</u>

Second Highest Delta "V"

23. <u>L</u>	24. <u>C₁</u>	<u>C₂</u>	<u>C₃</u>	<u>C₄</u>	<u>C₅</u>	<u>C₆</u>	25. <u>±D</u>
_____	_____	_____	_____	_____	_____	_____	<u>+</u> <u>-</u>

26. Are CDCs Documented but Not Coded on The Automated File? 0
(0) No
(1) Yes

27. Researcher's Assessment of Vehicle Disposition 0
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

28. Original Wheelbase 247
Code to the nearest centimeter
(999) Unknown

97.3 inches X 2.54 = 247 centimeters

29. Is This A Multi-Stage Manufactured Vehicle
And/Or A Certified Altered Vehicle? 0

(0) No post manufacturer modifications

(1) Yes - post manufacturer modifications
(specify): _____

(Include photograph of CERTIFICATION
PLACARD in case report)

(9) Unknown if vehicle is modified

30. Fire Occurrence 0

(0) No fire

Yes, fire occurred

(1) Minor

(2) Major

(9) Unknown

31. Origin of Fire 0

(0) No fire

(1) Vehicle exterior (front, side, back, top)

(2) Exhaust system

(3) Fuel tank (and other fuel retention
system parts)

(4) Engine compartment

(5) Cargo/trunk compartment

(6) Instrument panel

(7) Passenger compartment area

(8) Other location (specify): _____

(9) Unknown

32. Type of Fuel Tank 1

(0) No fuel tank (electrical vehicle)

(1) Metallic

(2) Non-metallic

(9) Unknown

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED AND WAS NOT AN AOPS ***
(I.E., GV09 = 0 OR 9 AND GV36 = 0), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.

U.S. Department of Transportation

National Highway Traffic Safety
Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number _____

2. Case Number - Stratum 93-073. Vehicle Number 02

INTEGRITY

4. Passenger Compartment Integrity 00

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (back door)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window (backlight)

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window (side window and backlight)

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify): _____

(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 1 6. RF 1 7. LR 1 8. RR 1 9. TG/H 1

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify): _____

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch
Opening in Collision. If IV05-IV09 \neq 2, Then code 010. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail,
etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify): _____

(9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 0 16. LF 0 17. RF 0 18. LR 0 19. RR 020. BL 0 21. Roof 8 22. Other 8

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from
impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 0 25. RF 0 26. LR 0 27. RR 028. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing out-of-place (cracked or not) by occupant
contact and not holed by occupant contact(5) Glazing out-of-place by occupant contact and holed by
occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage And No Occupant Contact or No
Glazing, Then Code IV31 Through IV46 As 0

Type of Window/Windshield Glazing

31. WS 0 32. LF 0 33. RF 0 34. LR 0 35. RR 036. BL 0 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 - Laminated

(2) AS-2 - Tempered

(3) AS-3 - Tempered-tinted

(4) AS-14 - Glass/Plastic

(8) Other (specify): _____

(9) Unknown

Window Precrash Glazing Status

39. WS 0 40. LF 0 41. RF 0 42. LR 0 43. RR 044. BL 0 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

(2) Closed

(3) Partially opened

(4) Fully opened

(9) Unknown

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

INTRUDING COMPONENT*Interior Components*

- (01) Steering assembly
 (02) Instrument panel left
 (03) Instrument panel center
 (04) Instrument panel right
 (05) Toe pan
 (06) A (A1/A2)-pillar
 (07) B-pillar
 (08) C-pillar
 (09) D-pillar
 (10) Door panel (side)
 (12) Roof (or convertible top)
 (13) Roof side rail
 (14) Windshield
 (15) Windshield header
 (16) Window frame
 (17) Floor pan (includes sill)
 (18) Backlight header
 (19) Front seat back
 (20) Second seat back
 (21) Third seat back
 (22) Fourth seat back
 (23) Fifth seat back
 (24) Seat cushion
 (25) Back door/panel (e.g., tailgate)
 (26) Other interior component (specify):

- (27) Side panel - forward of the A (A2)-pillar
 (28) Side panel - rear of the A (A2)-pillar

Exterior Components

- (30) Hood
 (31) Outside surface of this vehicle (specify):
 (32) Other exterior object in the environment (specify):
 (33) Unknown exterior object
 (97) Catastrophic
 (98) Intrusion of unlisted component(s) (specify):
 (99) Unknown

LOCATION OF INTRUSION

- Front Seat
 (11) Left
 (12) Middle
 (13) Right

- Fourth Seat
 (41) Left
 (42) Middle
 (43) Right

- Second Seat
 (21) Left
 (22) Middle
 (23) Right

- (97) Catastrophic
 (98) Other enclosed area (specify)

- Third Seat
 (31) Left
 (32) Middle
 (33) Right

- (99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 3 centimeters but < 8 centimeters
 (2) ≥ 8 centimeters but < 15 centimeters
 (3) ≥ 15 centimeters but < 30 centimeters
 (4) ≥ 30 centimeters but < 46 centimeters
 (5) ≥ 46 centimeters but < 61 centimeters
 (6) ≥ 61 centimeters
 (7) Catastrophic
 (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
 (2) Longitudinal
 (3) Lateral
 (7) Catastrophic
 (9) Unknown

NO INTRUSION

National Accident Sampling System-Crashworthiness Data System: Interior Vehicle Form

Page 3

STEERING COLUMN

87. Steering Column Type

- (1) Fixed column
 (2) Tilt column
 (3) Telescoping column
 (4) Tilt and telescoping column
 (8) Other column type (specify): _____

(9) Unknown

1

88. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

X X

89. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

X X X

90. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

X X X

91. Blank

(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

X X X

92. Steering Rim/Spoke Deformation

- Code actual measured deformation to the nearest centimeter
 (00) No steering rim deformation
 (01-14) Actual measured value in centimeters
 (15) 15 centimeters or more
 (98) Observed deformation cannot be measured
 (99) Unknown

0 0

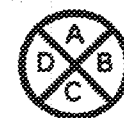
93. Location of Steering Rim/Spoke Deformation

(00) No steering rim deformation

0 0

Quarter Sections

- (01) Section A
 (02) Section B
 (03) Section C
 (04) Section D



Half Sections

- (05) Upper half of rim/spoke
 (06) Lower half of rim/spoke
 (07) Left half of rim/spoke
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse
 (10) Undetermined location
 (99) Unknown

INSTRUMENT PANEL

94. Odometer Reading

259,000

_____ kilometers—Code to the nearest 1,000 kilometers

- (000) No odometer
 (001) Less than 1,500 kilometers
 (500) 499,500 kilometers or more
 (999) Unknown

160,721 miles $\times 1.6093 =$ 258,761 kilometers

Source: _____

95. Instrument Panel Damage from Occupant Contact?

- (0) No
 (1) Yes
 (9) Unknown

0

96. Knee Bolsters Deformed from Occupant Contact?

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

8

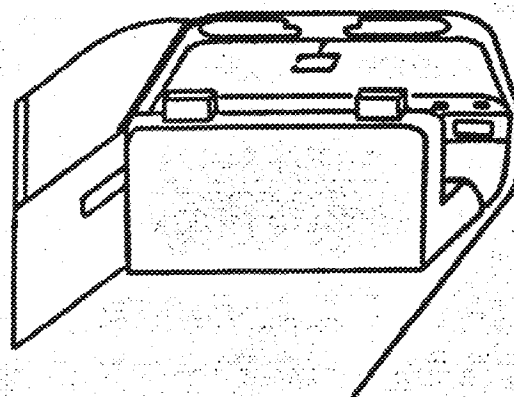
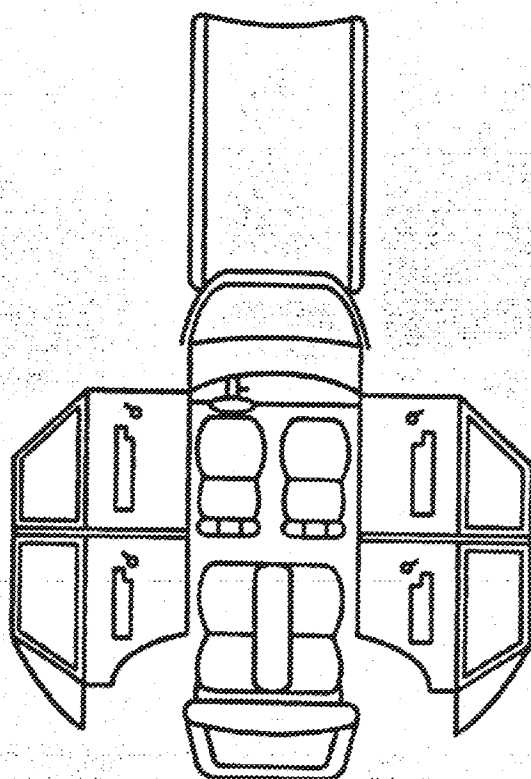
97. Did Glove Compartment Door Open During Collision(s)?

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

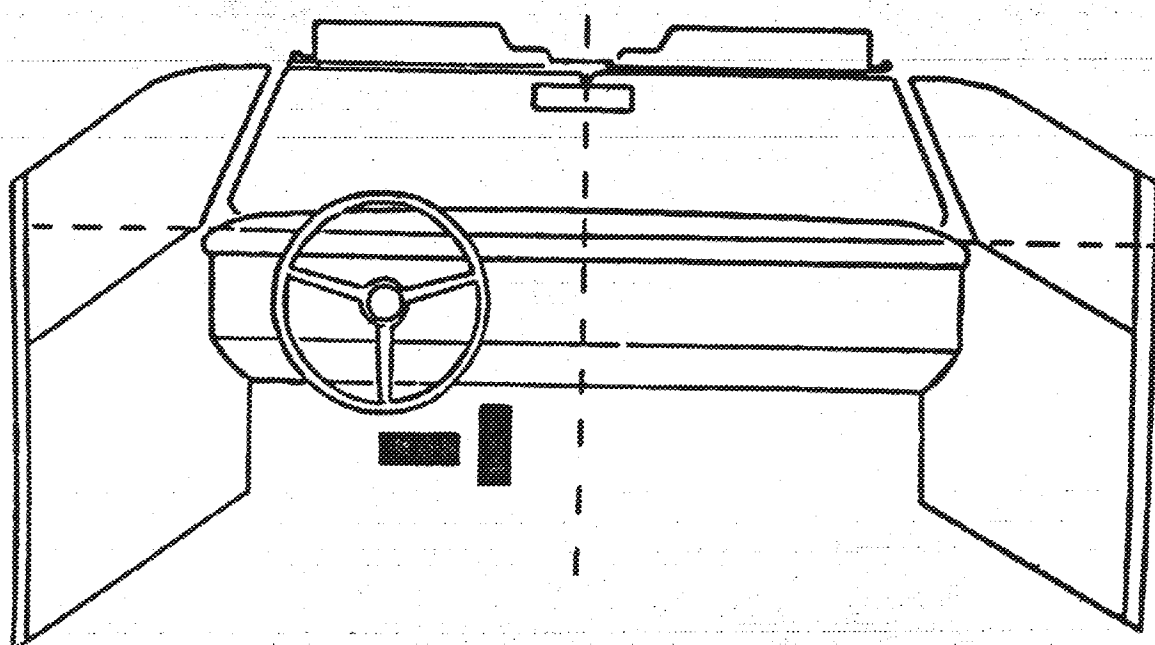
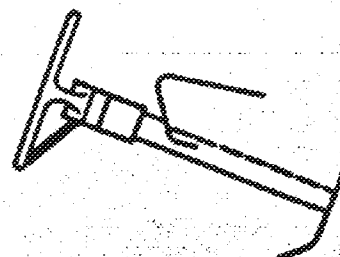
0

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



NO INTERIOR CONTACTS



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).
 Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.
 Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify): _____
- (19) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar

- (23) Left B-pillar
- (24) Other left pillar (specify): _____
- (25) Left side window glass or frame
- (26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (27) Other left side object (specify): _____

RIGHT SIDE

- (28) Left side window sill
- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A (A1/A2)-pillar
- (33) Right B-pillar
- (34) Other right pillar (specify): _____
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B pillar, or roof side rail.
- (37) Other right side object (specify): _____
- (38) Right side window sill

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)

- (46) Other occupants (specify): _____

- (47) Interior loose objects
- (48) Child safety seat (specify): _____
- (49) Other interior object (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Left	Right
F I R S T	Availability/Function	<input type="radio"/>	<input type="radio"/>
	Deployment	<input type="radio"/>	<input type="radio"/>
	Failure	<input type="radio"/>	<input type="radio"/>

Air Bag System Availability/Function

- (0) Not equipped/not available
(1) Air bag

Non-functional

- (2) Air bag disconnected (specify): _____

- (3) Air bag not reinstalled
(9) Unknown

Air Bag System Deployment

- (0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

Did Air Bag System Fail?

- (0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

AUTOMATIC BELTS

		Left	Right
F I R S T	Availability/Function	<input type="radio"/>	<input type="radio"/>
	Use	<input type="radio"/>	<input type="radio"/>
	Type	<input type="radio"/>	<input type="radio"/>
	Proper Use	<input type="radio"/>	<input type="radio"/>
	Failure Modes	<input type="radio"/>	<input type="radio"/>

Automatic (Passive) Belt System Availability/Function

- (0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
(9) Unknown

Automatic (Passive) Belt System Use

- (0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative)
(3) Automatic belt use unknown
(9) Unknown

Automatic (Passive) Belt System Type

- (0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

Proper Use of Automatic (Passive) Belt System

- (0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of automatic belt system (specify): _____
(9) Unknown

Automatic (Passive) Belt Failure Modes During Accident

- (0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other automatic belt failure (specify): _____
(9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a Child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	-	4
	Use	04	-	-
	Failure Modes	1	-	-
SECOND	Availability	3	3	3
	Use	-	-	-
	Failure Modes	-	-	-
THIRD	Availability	X		
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available - type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown

Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperable (specify): _____
- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used - type unknown

(08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat - type unknown
- (18) Other belt used with child safety seat (specify): _____
- (99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____
- (6) Broken retractor
- (7) Combination of above (specify): _____
- (8) Other manual belt failure (specify): _____
- (9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

- (0) No child safety seat
 (1) Infant seat
 (2) Toddler seat
 (3) Convertible seat
 (4) Booster seat
 (7) Other type child safety seat (specify):

(8) Unknown child safety seat type
 (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

- (00) No child safety seat
 Designed for Rear Facing for This Age/Weight
 (01) Rear facing
 (02) Forward facing
 (08) Other orientation (specify):
 (09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
 (12) Forward facing
 (18) Other orientation (specify):

(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
 (22) Forward facing
 (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage**4. Child Safety Seat Shield Usage****5. Child Safety Seat Tether Usage**

Note: Options Below Are Used for Variables 3-5.

(00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
 (02) After market harness/shield/tether used
 (03) Child safety seat used, but no after market harness/shield/tether added
 (09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether

- (11) Harness/shield/tether not used
 (12) Harness/shield/tether used
 (19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

- (21) Harness/shield/tether not used
 (22) Harness/shield/tether used
 (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for each seat position in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	-	3
	Seat Type	01	-	01
	Seat Performance	1	-	1
	Seat Orientation	1	-	1
SECOND	Head Restraint Type/Damage	0	0	0
	Seat Type	05	05	05
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			

Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral — no damage
- (2) Integral — damaged during accident
- (3) Adjustable — no damage
- (4) Adjustable — damaged during accident
- (5) Add-on — no damage
- (6) Add-on — damaged during accident
- (8) Other Specify: _____

(9) Unknown

Seat Type (this Occupant Position)

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify): _____

- (10) Box mounted seat (i.e., van type)
- (99) Unknown

Seat Performance (this Occupant Position)

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed specify: _____
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____

(7) Combination of above (specify): _____

(8) Other (specify): _____

(9) Unknown

Seat Orientation (this Occupant Position)

- (0) Occupant not seated or no seat
- (1) Forward facing seat
- (2) Rear facing seat
- (3) Side facing seat (inward)
- (4) Side facing seat (outward)
- (8) Other (specify): _____

(9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

EJECTION No [☒] Yes [☐]

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection

- (1) Complete ejection
(1) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area

- (1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear

(7) Roof

- (8) Other area (e.g., back of pickup, etc.) (specify):

(9) Unknown**Ejection Medium**

- (1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify):

(5) Integral structure

- (8) Other medium (specify):

(9) Unknown**Medium Status (Immediately Prior to Impact)**

- (1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No [☒] Yes [☐]

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

APPENDIX D
NASS Occupant Forms

VEHICLE #1

1993 Volvo 850 GLT



OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number

2. Case Number - Stratum

3. Vehicle Number

4. Occupant Number

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age

Code actual age at time of accident.

(00) Less than one year old (specify by month):

(97) 97 years and older

(99) Unknown

6. Occupant's Sex

(1) Male

(2) Female

(9) Unknown

7. Occupant's Height

Code actual height to the nearest centimeter.

(999) Unknown

60 inches X 2.54 = 152 centimeters

8. Occupant's Weight

Code actual weight to the nearest kilogram.

(999) Unknown

90 pounds X .4536 = 41 kilograms

9. Occupant's Role

(1) Driver

(2) Passenger

(9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position

Front Seat

(11) Left side

(12) Middle

(13) Right side

(14) Other (specify):

(15) On or in the lap of another occupant

Second Seat

(21) Left side

(22) Middle

(23) Right side

(24) Other (specify):

(25) On or in the lap of another occupant

Third Seat

(31) Left side

(32) Middle

(33) Right side

(34) Other (specify):

(35) On or in the lap of another occupant

Fourth Seat

(41) Left side

(42) Middle

(43) Right side

(44) Other (specify):

(45) On or in the lap of another occupant

(97) In or on unenclosed area

(98) Other seat (specify):

(99) Unknown

11. Occupant's Posture

(0) Normal posture

Abnormal posture

(1) Kneeling or standing on seat

(2) Lying on or across seat

(3) Kneeling, standing or sitting in front of seat

(4) Sitting sideways or turned to talk with another occupant or to look out a rear window

(5) Sitting on a console

(6) Lying back in a reclined seat position

(7) Bracing with feet or hands on a surface in front of seat

(8) Other abnormal posture (specify):

(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0

- (0) No ejection
- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

13. Ejection Area 0

- (0) No ejection
- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear
- (7) Roof
- (8) Other area (e.g., back of pickup, etc.)
(specify): _____
- (9) Unknown

14. Ejection Medium 0

- (0) No ejection
- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify): _____
- (5) Integral structure
- (8) Other medium (specify): _____
- (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0

- (0) No ejection
- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

16. Entrapment 0

(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)

- (0) Not entrapped
- (1) Entrapped
- (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability 4

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown

18. Manual (Active) Belt System Use 00

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): _____

(02) Shoulder belt

(03) Lap belt

(04) Lap and shoulder belt

(05) Belt used—type unknown

(08) Other belt used (specify): _____

(12) Shoulder belt used with child safety seat

(13) Lap belt used with child safety seat

(14) Lap and shoulder belt used with child safety seat

(15) Belt used with child safety seat—type unknown

(18) Other belt used with child safety seat (specify): _____

(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts 0

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____

(8) Other improper use of manual belt system (specify): _____

(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident 0

- (0) No manual belt used
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____

(6) Broken retractor

(7) Combination of above (specify): _____

(8) Other manual belt failure (specify): _____

(9) Unknown

21. Air Bag System Availability/Function 1

- (0) Not equipped/not available
- (1) Air bag

Non-functional

(2) Air bag disconnected (specify): _____

(3) Air bag not reinstalled

(9) Unknown

22. Air Bag System Deployment 1

- (0) Not equipped/not available
- (1) Air bag deployed during accident (as a result of impact)
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (9) Unknown

23. Are There Indications of Air Bag System Failure? 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____

(9) Unknown

Note: See Variables 44 through 48 (Page 5) for information on Automatic Belts

24. Police Reported Restraint Use 4

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): _____

(8) Restrained, type unknown

(9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant
at This Occupant Position 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): _____
- (9) Unknown

26. Seat Type (this Occupant Position) 01

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify): _____
- (10) Box mounted seat (i.e., van type)
- (99) Unknown

27. Seat Performance (this Occupant Position) 1

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed
- (4) Seat track/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____
- (7) Combination of above (specify): _____
- (8) Other (specify): _____
- (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 0 0 0

(000) No child safety seat

Applicable codes are found in your NASS CDS

Data Collection, Coding and Editing

(950) Built-in child safety seat

(997) Other make/model (specify):

(998) Unknown make/model

(999) Unknown if child safety seat used

29. Type of Child Safety Seat 0

(0) No child safety seat

(1) Infant seat

(2) Toddler seat

(3) Convertible seat

(4) Booster seat

(7) Other type child safety seat (specify):

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

30. Child Safety Seat Orientation 0 0

(00) No child safety seat

Designed for Rear Facing for This Age/Weight

(01) Rear facing

(02) Forward facing

(08) Other orientation (specify):

(09) Unknown orientation

Designed For Forward Facing for This Age/Weight

(11) Rear facing

(12) Forward facing

(18) Other orientation (specify):

(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight

(21) Rear facing

(22) Forward facing

(28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 0 032. Child Safety Seat Shield Usage 0 033. Child Safety Seat Tether Usage 0 0

Note: Options below applicable to Variables OA31-OA33.

(00) No child safety seat

Not Designed With Harness/Shield/Tether

(01) After market harness/shield/tether added, not used

(02) After market harness/shield/tether used

(03) Child safety seat used, but no after market harness/shield/tether added

(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether

(11) Harness/shield/tether not used

(12) Harness/shield/tether used

(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

(21) Harness/shield/tether not used

(22) Harness/shield/tether used

(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES34. Injury Severity (Police Rating) 2

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

35. Treatment - Mortality 0

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease (specify):

Nonfatal

- (3) Hospitalization
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later
- (8) Treatment - other (specify):
- (9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 0

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):
- (9) Unknown

37. Hospital Stay 00

- (00) Not Hospitalized
- Code the number of days (up through 60) that the occupant stayed in hospital.
- (61) 61 days or more
- (99) Unknown

38. Working Days Lost 99

- Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7**VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER**39. Time to Death 00

- Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)
- (00) Not fatal
- (96) Fatal - ruled disease
- (99) Unknown

40. 1st Medically Reported Cause of Death 0041. 2nd Medically Reported Cause of Death 0042. 3rd Medically Reported Cause of Death 00

- Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
- (00) Not fatal or no additional causes
- (97) Other result (includes fatal ruled disease) (specify):

(99) Unknown

43. Number of Recorded Injuries for This Occupant 03

- Code the actual number of injuries recorded for this occupant.
- (00) No recorded injuries
- (97) Injured, details unknown
- (99) Unknown if injured

AUTOMATIC BELT SYSTEM44. Automatic (Passive) Belt System Availability/Function 0

- (0) Not equipped/not available
 (1) 2 point automatic belts
 (2) 3 point automatic belts
 (3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
 (9) Unknown

45. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
 (1) Automatic belt in use
 (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):
 (3) Automatic belt use unknown
 (9) Unknown

46. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
 (1) Non-motorized system
 (2) Motorized system
 (9) Unknown

47. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
 (1) Automatic belt used properly
 (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
 (4) Automatic shoulder belt worn behind back
 (5) Automatic belt worn around more than one person
 (6) Lap portion of automatic belt worn on abdomen
 (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):
 (8) Other improper use of automatic belt system (specify):
 (9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
 (1) No automatic belt failure(s)
 (2) Torn webbing (stretched webbing not included)
 (3) Broken buckle or latchplate
 (4) Upper anchorage separated
 (5) Other anchorage separated (specify):
 (6) Broken retractor
 (7) Combination of above (specify):
 (8) Other automatic belt failure (specify):
 (9) Unknown

49. Seat Orientation (this Occupant Position) 1

- (0) Occupant not seated or no seat
 (1) Forward facing seat
 (2) Rear facing seat
 (3) Side facing seat (inward)
 (4) Side facing seat (outward)
 (8) Other (specify):
 (9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA50. Glasgow Coma Scale (GCS) Score (at Medical Facility) 01

- (00) Not injured
 (01) Injured - not treated at medical facility
 (02) No GCS Score at medical facility
 (03-15) Code the actual value of the initial GCS Score recorded at medical facility.
 (97) Injured, details unknown
 (99) Unknown if injured

51. Was the Occupant Given Blood? 1

- (1) No - blood not given
 (2) Yes - blood given (specify units):
 (9) Unknown if blood given

52. Arterial Blood Gases (ABG) - HCO₃ 01

- (00) Not injured
 (01) Injured, ABGs not measured or reported
 (02-50) Code the actual value of the HCO₃
 (96) ABGs reported, HCO₃ unknown
 (97) Injured, details unknown
 (99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION?

NO [] YES []

UPDATE CANDIDATE?

NO [✓] YES []



OCCUPANT INJURY FORM

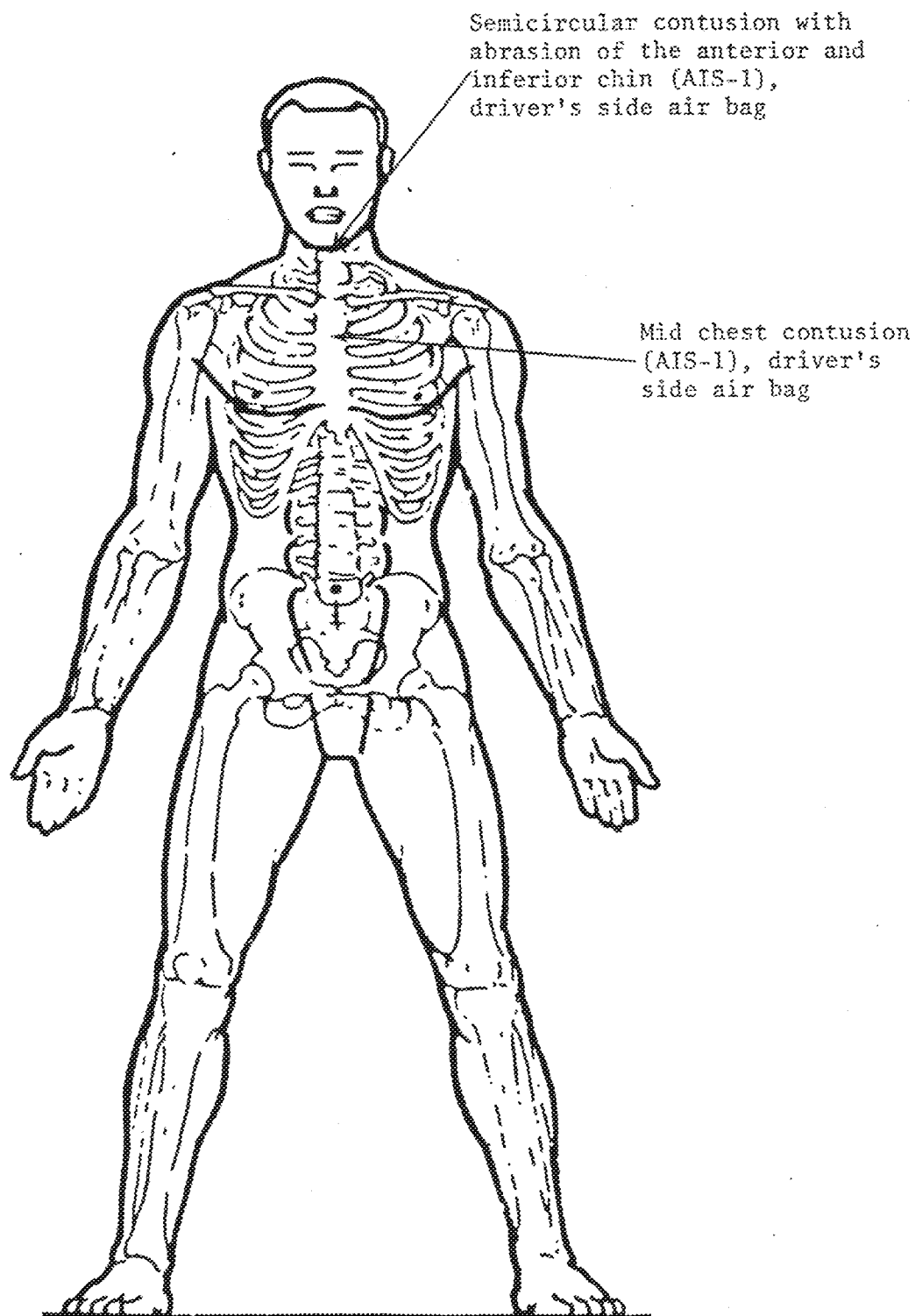
1. Primary Sampling Unit Number	3. Vehicle Number
2. Case Number - Stratum	4. Occupant Number
93-07	01

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	O.I.C.-A.I.S.						Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
		Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect				
1st	5. 8	6. 4	7. 9	8. 04	9. 02	10. 1	11. 4	12. 45	13. 1	14. 1	15. 00
2nd	16. 8	17. 2	18. 9	19. 02	20. 02	21. 1	22. 8	23. 45	24. 1	25. 1	26. 00
3rd	27. 8	28. 2	29. 9	30. 04	31. 04	32. 1	33. 8	34. 45	35. 1	36. 1	37. 00
4th	38. ____	39. ____	40. ____	41. ____	42. ____	43. ____	44. ____	45. ____	46. ____	47. ____	48. ____
5th	49. ____	50. ____	51. ____	52. ____	53. ____	54. ____	55. ____	56. ____	57. ____	58. ____	59. ____
6th	60. ____	61. ____	62. ____	63. ____	64. ____	65. ____	66. ____	67. ____	68. ____	69. ____	70. ____
7th	71. ____	72. ____	73. ____	74. ____	75. ____	76. ____	77. ____	78. ____	79. ____	80. ____	81. ____
8th	82. ____	83. ____	84. ____	85. ____	86. ____	87. ____	88. ____	89. ____	90. ____	91. ____	92. ____
9th	93. ____	94. ____	95. ____	96. ____	97. ____	98. ____	99. ____	100. ____	101. ____	102. ____	103. ____
10th	104. ____	105. ____	106. ____	107. ____	108. ____	109. ____	110. ____	111. ____	112. ____	113. ____	114. ____

AGE 34
SEX Female
WT. 40.5kg (90 lb)
HT. 152.4cm (60")



SOURCE OF INJURY DATA

OFFICIAL

- (1) Autopsy records with or without hospital/medical records
- (2) Hospital/medical records other than emergency room (e.g., discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

UNOFFICIAL

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewees
- (8) Other source (specify):
- (9) Police

INJURY SOURCE

FRONT

- (01) Windshield
- (02) Mirror
- (03) Survivor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify):
- (19) Other front object (specify):

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar
- (23) Left B-pillar
- (24) Other left pillar (specify):

- (25) Left side window glass or frame
- (26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify):

- (28) Left side window sill

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A (A1/A2)-pillar
- (33) Right B-pillar
- (34) Other right pillar (specify):

- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail
- (37) Other right side object (specify):

- (38) Right side window sill

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar or door frame attachment point
- (43) Other restraint system component (specify):
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
- (46) Other occupants (specify):
- (47) Interior loose objects
- (48) Child safety seat (specify):
- (49) Other interior object (specify):

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (55) Floor (including toe pan)
- (56) Floor or console mounted transmission lever, including console
- (57) Parking brake handle
- (58) Foot controls including parking brake

REAR

- (60) Backlight (rear window)

- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify):

EXTERIOR of OCCUPANT'S VEHICLE

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tire (specify):
- (68) Unknown exterior objects

EXTERIOR of OTHER MOTOR VEHICLE

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify):

- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify):

- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify):

- (83) Unknown exterior of other motor vehicle

OTHER VEHICLE or OBJECT in the ENVIRONMENT

- (84) Ground
- (85) Other vehicle or object (specify):
- (86) Unknown vehicle or object

NONCONTACT INJURY

- (89) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify):
- (93) Air bag exhaust gases
- (97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

DIRECT/INDIRECT INJURY

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION

Body Region	Specific Anatomic Structure	Spine	Abbreviated Injury Scale
(1) Head	Whole Area	(02) Cervical	(1) Minor injury
(2) Face	(02) Skin - Abrasion	(04) Thoracic	(2) Moderate injury
(3) Neck	(04) Skin - Contusion	(06) Lumbar	(3) Serious injury
(4) Thorax	(06) Skin - Laceration		(4) Severe injury
(5) Abdomen	(08) Skin - Avulsion		(5) Critical injury
(6) Spine	(10) Amputation		(6) Maximum (untreatable)
(7) Upper Extremity	(20) Burn		(7) Injured, unknown severity
(8) Lower Extremity	(30) Crush		
(9) Unspecified	(40) Degloving		
	(50) Injury - NFS		
	(60) Trauma, other than mechanical		
Type of Anatomic Structure		Level of Injury	Aspect
(1) Whole Area	Head - LOC	Specific injuries are assigned consecutive two-digit numbers beginning with 02.	(1) Right
(2) Vessels	(02) Length of LOC		(2) Left
(3) Nerves	(04, 06, 08) Level of Consciousness		(3) Bilateral
(4) Organs (includes muscles/ligaments)	(10) Concussion		(4) Central
(5) Skeletal (includes joints)			(5) Anterior
(6) Head - LOC			(6) Posterior
(8) Skin			(7) Superior
			(8) Inferior
			(9) Unknown
			(0) Whole region



OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number

2. Case Number - Stratum

3. Vehicle Number

4. Occupant Number

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age

Code actual age at time of accident.

(00) Less than one year old (specify by month):

(97) 97 years and older

(99) Unknown

6. Occupant's Sex

(1) Male

(2) Female

(9) Unknown

7. Occupant's Height

Code actual height to the nearest
centimeter.

(999) Unknown

44 inches X 2.54 = 112 centimeters

8. Occupant's Weight

Code actual weight to the nearest
kilogram.

(999) Unknown

51 pounds X .4536 = 23 kilograms

9. Occupant's Role

(1) Driver

(2) Passenger

(9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position

Front Seat

(11) Left side

(12) Middle

(13) Right side

(14) Other (specify):

(15) On or in the lap of another occupant

Second Seat

(21) Left side

(22) Middle

(23) Right side

(24) Other (specify):

(25) On or in the lap of another occupant

Third Seat

(31) Left side

(32) Middle

(33) Right side

(34) Other (specify):

(35) On or in the lap of another occupant

Fourth Seat

(41) Left side

(42) Middle

(43) Right side

(44) Other (specify):

(45) On or in the lap of another occupant

(97) In or on unenclosed area

(98) Other seat (specify):

(99) Unknown

11. Occupant's Posture

(0) Normal posture

Abnormal posture

(1) Kneeling or standing on seat

(2) Lying on or across seat

(3) Kneeling, standing or sitting in front of seat

(4) Sitting sideways or turned to talk with another
occupant or to look out a rear window

(5) Sitting on a console

(6) Lying back in a reclined seat position

(7) Bracing with feet or hands on a surface in front
of seat

(8) Other abnormal posture (specify):

(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0

- (0) No ejection
- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

13. Ejection Area 0

- (0) No ejection
- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear
- (7) Roof
- (8) Other area (e.g., back of pickup, etc.)
(specify): _____
- (9) Unknown

14. Ejection Medium 0

- (0) No ejection
- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify): _____
- (5) Integral structure
- (8) Other medium (specify): _____
- (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0

- (0) No ejection
- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

16. Entrapment 0

(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)

- (0) Not entrapped
- (1) Entrapped
- (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability 4

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown _____

18. Manual (Active) Belt System Use 0 0

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): _____

(02) Shoulder belt _____

(03) Lap belt _____

(04) Lap and shoulder belt _____

(05) Belt used—type unknown _____

(08) Other belt used (specify): _____

(12) Shoulder belt used with child safety seat _____

(13) Lap belt used with child safety seat _____

(14) Lap and shoulder belt used with child safety seat _____

(15) Belt used with child safety seat—type unknown _____

(18) Other belt used with child safety seat (specify): _____

(99) Unknown if belt used _____

19. Proper Use of Manual (Active) Belts 0

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____

(8) Other improper use of manual belt system (specify): _____

(9) Unknown _____

20. Manual (Active) Belt Failure Modes During Accident 0

- (0) No manual belt used
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____

(6) Broken retractor _____

(7) Combination of above (specify): _____

(8) Other manual belt failure (specify): _____

(9) Unknown _____

21. Air Bag System Availability/Function 1

- (0) Not equipped/not available
- (1) Air bag

Non-functional

(2) Air bag disconnected (specify): _____

(3) Air bag not reinstalled _____

(9) Unknown _____

22. Air Bag System Deployment 1

- (0) Not equipped/not available
- (1) Air bag deployed during accident (as a result of impact)
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (9) Unknown

23. Are There Indications of Air Bag System Failure? 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____

(9) Unknown _____

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use 7

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): AIR BAG
- (8) Restrained, type unknown
- (9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): _____
- (9) Unknown

26. Seat Type (this Occupant Position) 01

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify): _____
- (10) Box mounted seat (i.e., van type)
- (99) Unknown

27. Seat Performance (this Occupant Position) 1

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed
- (4) Seat track/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____
- (7) Combination of above (specify): _____
- (8) Other (specify): _____
- (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 0 0 0
 (000) No child safety seat
 Applicable codes are found in your NASS CDS
 Data Collection, Coding and Editing
 (950) Built-in child safety seat
 (997) Other make/model (specify):

(998) Unknown make/model
 (999) Unknown if child safety seat used

29. Type of Child Safety Seat 0
 (0) No child safety seat
 (1) Infant seat
 (2) Toddler seat
 (3) Convertible seat
 (4) Booster seat
 (7) Other type child safety seat (specify):

(8) Unknown child safety seat type
 (9) Unknown if child safety seat used

30. Child Safety Seat Orientation 0 0
 (00) No child safety seat

Designed for Rear Facing for This Age/Weight

(01) Rear facing
 (02) Forward facing
 (08) Other orientation (specify):

(09) Unknown orientation

Designed For Forward Facing for This Age/Weight

(11) Rear facing
 (12) Forward facing
 (18) Other orientation (specify):

(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight

(21) Rear facing
 (22) Forward facing
 (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 0 0

32. Child Safety Seat Shield Usage 0 0

33. Child Safety Seat Tether Usage 0 0

Note: Options below applicable to
 Variables OA31-OA33.

(00) No child safety seat

Not Designed With Harness/Shield/Tether

(01) After market harness/shield/tether
 added, not used
 (02) After market harness/shield/tether used
 (03) Child safety seat used, but no after market
 harness/shield/tether added
 (09) Unknown if harness/shield/tether
 added or used

Designed With Harness/Shield/Tether

(11) Harness/shield/tether not used
 (12) Harness/shield/tether used
 (19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

(21) Harness/shield/tether not used
 (22) Harness/shield/tether used
 (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES34. Injury Severity (Police Rating) 4

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

35. Treatment - Mortality 1

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease (specify):

Nonfatal

- (3) Hospitalization
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later
- (8) Treatment - other (specify):

- (9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 2

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):

- (9) Unknown

37. Hospital Stay 0 2

- (00) Not Hospitalized
- _____ Code the number of days (up through 60)
that the occupant stayed in hospital.
- (61) 61 days or more
- (99) Unknown

38. Working Days Lost 0 0

- _____ Code the number of days
(up through 60) that the occupant
lost from work due to the accident
- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7**VARIABLES 39 THROUGH 43 ARE
COMPLETED BY THE ZONE CENTER**39. Time to Death 3 2

- _____ Code number of hours from time of
accident to time of death up through 24
hours. If time of death is greater than 24
hours, code number of days. (Note: 1 day =
31, 2 days = 32, ... n days = 30 + n up
through 30 days = 60)
- (00) Not fatal
- (96) Fatal - ruled disease
- (99) Unknown

40. 1st Medically Reported Cause of Death 0 141. 2nd Medically Reported Cause of Death 0 242. 3rd Medically Reported Cause of Death 0 3

- _____ Code the Occupant Injury from line
number(s) for the medically reported
injury(s) which reportedly contributed to
this occupant's death
- (00) Not fatal or no additional causes
- (97) Other result (includes fatal ruled
disease) (specify):

- (99) Unknown

43. Number of Recorded Injuries for
This Occupant 2 1

- _____ Code the actual number of
injuries recorded for this occupant.
- (00) No recorded injuries
- (97) Injured, details unknown
- (99) Unknown if injured

AUTOMATIC BELT SYSTEM44. Automatic (Passive) Belt System Availability/Function 0

- (0) Not equipped/not available
 (1) 2 point automatic belts
 (2) 3 point automatic belts
 (3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
 (9) Unknown

45. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
 (1) Automatic belt in use
 (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):
 (3) Automatic belt use unknown
 (9) Unknown

46. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
 (1) Non-motorized system
 (2) Motorized system
 (9) Unknown

47. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
 (1) Automatic belt used properly
 (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
 (4) Automatic shoulder belt worn behind back
 (5) Automatic belt worn around more than one person
 (6) Lap portion of automatic belt worn on abdomen
 (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):
 (8) Other improper use of automatic belt system (specify):
 (9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
 (1) No automatic belt failure(s)
 (2) Torn webbing (stretched webbing not included)
 (3) Broken buckle or latchplate
 (4) Upper anchorage separated
 (5) Other anchorage separated (specify):
 (6) Broken retractor
 (7) Combination of above (specify):
 (8) Other automatic belt failure (specify):
 (9) Unknown

49. Seat Orientation (this Occupant Position) 1

- (0) Occupant not seated or no seat
 (1) Forward facing seat
 (2) Rear facing seat
 (3) Side facing seat (inward)
 (4) Side facing seat (outward)
 (8) Other (specify):
 (9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA50. Glasgow Coma Scale (GCS) Score (at Medical Facility) 03

- (00) Not injured
 (01) Injured - not treated at medical facility
 (02) No GCS Score at medical facility
 (03-15) Code the actual value of the initial GCS Score recorded at medical facility.
 (97) Injured, details unknown
 (99) Unknown if injured

51. Was the Occupant Given Blood? 9

- (1) No - blood not given
 (2) Yes - blood given (specify units):
 (9) Unknown if blood given

52. Arterial Blood Gases (ABG) - HCO₃ 01

- (00) Not injured
 (01) Injured, ABGs not measured or reported
 (02-50) Code the actual value of the HCO₃
 (96) ABGs reported, HCO₃ unknown
 (97) Injured, details unknown
 (99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION?

NO [] YES []

UPDATE CANDIDATE?

NO [✓] YES []



OCCUPANT INJURY FORM

1. Primary Sampling Unit Number

3. Vehicle Number

2. Case Number - Stratum

4. Occupant Number

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	O.I.C.-A.I.S.					Injury Source	Injury Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number	
		Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity					Aspect
1st	5. <u>1</u>	6. <u>1</u>	7. <u>4</u>	8. <u>02</u>	9. <u>04</u>	10. <u>5</u>	11. <u>8</u>	12. <u>02/54</u>	13. <u>1</u>	14. <u>1</u>	15. <u>00</u>
2nd	16. <u>1</u>	17. <u>1</u>	18. <u>4</u>	19. <u>02</u>	20. <u>02</u>	21. <u>5</u>	22. <u>8</u>	23. <u>02/54</u>	24. <u>1</u>	25. <u>1</u>	26. <u>00</u>
3rd	27. <u>1</u>	28. <u>1</u>	29. <u>4</u>	30. <u>06</u>	31. <u>24</u>	32. <u>4</u>	33. <u>3</u>	34. <u>02/54</u>	35. <u>1</u>	36. <u>1</u>	37. <u>00</u>
4th	38. <u>1</u>	39. <u>1</u>	40. <u>4</u>	41. <u>06</u>	42. <u>64</u>	43. <u>4</u>	44. <u>9</u>	45. <u>02/54</u>	46. <u>1</u>	47. <u>1</u>	48. <u>00</u>
5th	49. <u>1</u>	50. <u>1</u>	51. <u>4</u>	52. <u>06</u>	53. <u>84</u>	54. <u>3</u>	55. <u>9</u>	56. <u>02/54</u>	57. <u>1</u>	58. <u>1</u>	59. <u>00</u>
6th	60. <u>1</u>	61. <u>4</u>	62. <u>4</u>	63. <u>14</u>	64. <u>10</u>	65. <u>4</u>	66. <u>3</u>	67. <u>17/45</u>	68. <u>1</u>	69. <u>1</u>	70. <u>00</u>
7th	71. <u>1</u>	72. <u>4</u>	73. <u>4</u>	74. <u>10</u>	75. <u>04</u>	76. <u>3</u>	77. <u>4</u>	78. <u>17/45</u>	79. <u>1</u>	80. <u>1</u>	81. <u>00</u>
8th	82. <u>1</u>	83. <u>5</u>	84. <u>4</u>	85. <u>42</u>	86. <u>22</u>	87. <u>2</u>	88. <u>2</u>	89. <u>17/45</u>	90. <u>1</u>	91. <u>1</u>	92. <u>00</u>
9th	93. <u>1</u>	94. <u>1</u>	95. <u>9</u>	96. <u>04</u>	97. <u>02</u>	98. <u>1</u>	99. <u>5</u>	100. <u>02</u>	101. <u>1</u>	102. <u>1</u>	103. <u>00</u>
10th	104. <u>1</u>	105. <u>1</u>	106. <u>9</u>	107. <u>04</u>	108. <u>02</u>	109. <u>1</u>	110. <u>6</u>	111. <u>02</u>	112. <u>1</u>	113. <u>1</u>	114. <u>00</u>

OCCUPANT INJURY DATA

	Source of Injury Data	O.I.C.-A.I.S						Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
		Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect				
11th	<u>1</u>	<u>2</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>1</u>	<u>40</u>	<u>1</u>	<u>1</u>	<u>00</u>
12th	<u>1</u>	<u>2</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>1</u>	<u>40</u>	<u>1</u>	<u>1</u>	<u>00</u>
13th	<u>1</u>	<u>2</u>	<u>9</u>	<u>74</u>	<u>02</u>	<u>1</u>	<u>2</u>	<u>02</u>	<u>1</u>	<u>1</u>	<u>00</u>
14th	<u>1</u>	<u>2</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>4</u>	<u>02</u>	<u>1</u>	<u>1</u>	<u>00</u>
15th	<u>1</u>	<u>2</u>	<u>9</u>	<u>06</u>	<u>02</u>	<u>1</u>	<u>4</u>	<u>02</u>	<u>1</u>	<u>1</u>	<u>00</u>
16th	<u>1</u>	<u>2</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>8</u>	<u>17</u>	<u>1</u>	<u>1</u>	<u>00</u>
17th	<u>1</u>	<u>2</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>8</u>	<u>17</u>	<u>1</u>	<u>1</u>	<u>00</u>
18th	<u>1</u>	<u>2</u>	<u>9</u>	<u>02</u>	<u>02</u>	<u>1</u>	<u>8</u>	<u>17</u>	<u>1</u>	<u>1</u>	<u>00</u>
19th	<u>1</u>	<u>7</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>2</u>	<u>17</u>	<u>1</u>	<u>1</u>	<u>00</u>
20th	<u>1</u>	<u>7</u>	<u>9</u>	<u>04</u>	<u>02</u>	<u>1</u>	<u>2</u>	<u>01</u>	<u>1</u>	<u>1</u>	<u>00</u>
21st	<u>1</u>	<u>7</u>	<u>9</u>	<u>06</u>	<u>00</u>	<u>1</u>	<u>2</u>	<u>01</u>	<u>1</u>	<u>1</u>	<u>00</u>
22nd	---	---	---	---	---	---	---	---	---	---	---
23rd	---	---	---	---	---	---	---	---	---	---	---
24th	---	---	---	---	---	---	---	---	---	---	---
25th	---	---	---	---	---	---	---	---	---	---	---

AGE 6
SEX Female
WT. 23 kg (51 lb)
HT. 111.8 cm (44

Fine, diffuse, acute subarachnoid hemorrhage (AIS-3), rearview mirror/maplight

Hematoma of the auricle of the right ear (AIS-1), right front seat cushion

0.7 cm hematoma of the intertrial septum over the right atrium (AIS-3), passenger side air bag

0.7 cm hematoma of the right frontal scalp (AIS-1), rearview mirror

5 cm diameter hematoma over the superior sagittal suture line of the scalp (AIS-1), rearview mirror

Focally hemorrhagic and ecchymotic areas of the lungs (AIS-1), passenger side air bag

1.7 cm rupture of the capsule of the spleen (AIS-2), passenger side air bag

Pronounced brain swelling 1545 grams (AIS-4), rearview mirror/maplight

Uncal and cerebular tonsillar herniation (AIS-5), rearview mirror/maplight

Acute contusion of the inferior aspect of the pons on the right (AIS-5), rearview mirror/overhead map light

Acute contusions of the superior aspect of the left and right temporal lobes, anteriorly (AIS-4), rearview mirror/map light

4 x 2 cm hematoma at the lateral aspect of the left eye (AIS-1), rearview mirror

4 x 2 cm hematoma to the lateral tip of the nose (AIS-1), rearview mirror

2 and 3 cm lacerations to the left lateral tip of the nose (AIS-1), rearview mirror

3 x 1.5 cm abrasion at the left lateral aspect of the mouth (AIS-1), passenger side air bag module cover flap

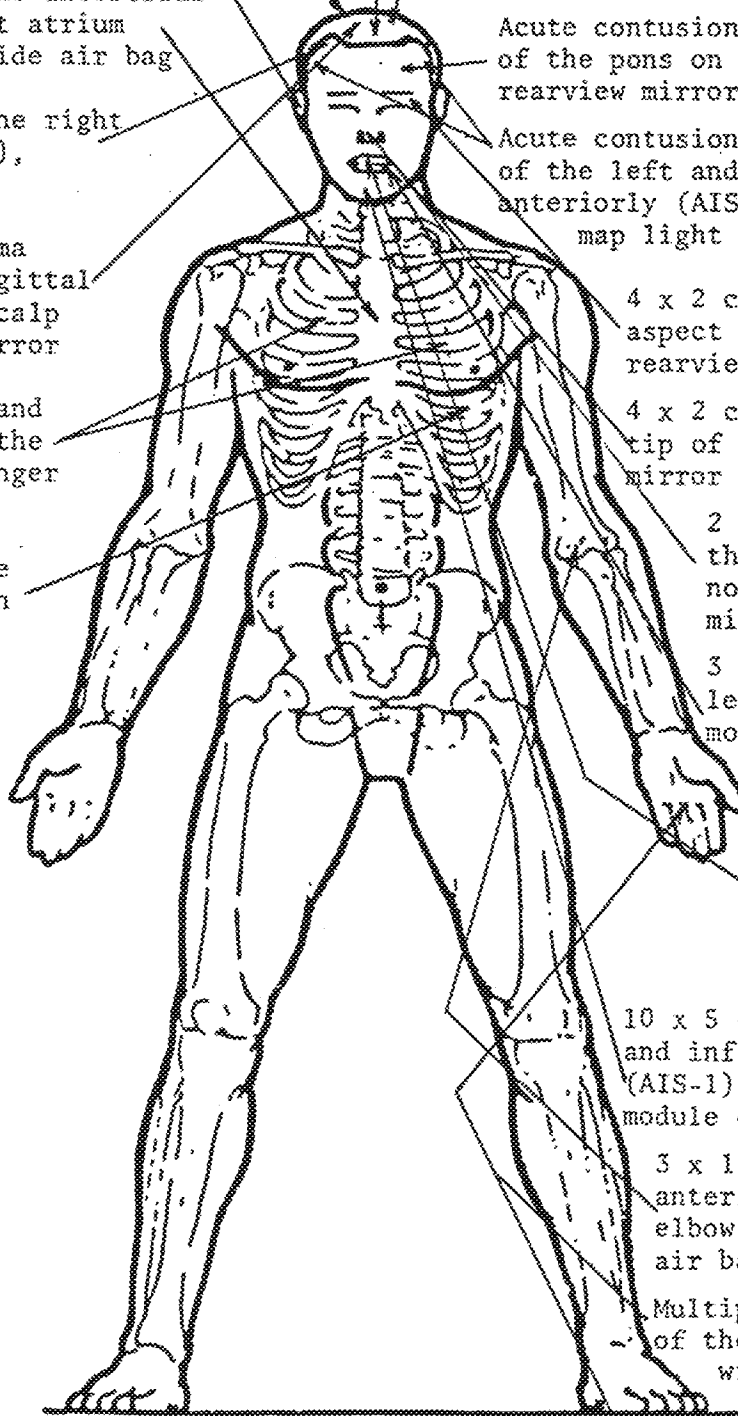
4 x 1 cm hemorrhage to the upper and lower lips (AIS-1), passenger side air bag module cover flap

10 x 5 cm abrasion to the anterior and inferior aspect of the chin (AIS-1), passenger side air bag module cover flap

3 x 1 cm hematoma over the anterior armfold at the left elbow (AIS-1), passenger side air bag module cover flap

Multiple hematomas of the dorsum of the left hand (AIS-1), windshield

Multiple lacerations (glass cuts) to the dorsum of the left hand (AIS-1), windshield



SOURCE OF INJURY DATA

OFFICIAL

- (1) Autopsy records with or without hospital/medical records
- (2) Hospital/medical records other than emergency room (e.g., discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

UNOFFICIAL

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewees
- (8) Other source (specify):
- (9) Police

INJURY SOURCE

FRONT

- (01) Windshield
- (02) Mirror
- (03) Survivor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify):
- (19) Other front object (specify):

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar
- (23) Left B-pillar
- (24) Other left pillar (specify):

- (25) Left side window glass or frame
- (26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify):
- (28) Left side window sill

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A (A1/A2)-pillar
- (33) Right B-pillar
- (34) Other right pillar (specify):
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail
- (37) Other right side object (specify):

- (38) Right side window sill

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar or door frame attachment point
- (43) Other restraint system component (specify):
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
- (46) Other occupants (specify):
- (47) Interior loose objects
- (48) Child safety seat (specify):
- (49) Other interior object (specify):

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)

- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify):

EXTERIOR OF OCCUPANT'S VEHICLE

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tire (specify):
- (68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE

- (70) Front bumper
- (71) Head edge
- (72) Other front of vehicle (specify):
- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify):

- (79) Rear surface

- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify):

- (83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT

- (84) Ground
- (85) Other vehicle or object (specify):
- (86) Unknown vehicle or object

NONCONTACT INJURY

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify):
- (93) Air bag exhaust gases
- (97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

DIRECT/INDIRECT INJURY

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION

Body Region

- (1) Head
- (2) Face
- (3) Neck
- (4) Thorax
- (5) Abdomen
- (6) Spine
- (7) Upper Extremity
- (8) Lower Extremity
- (9) Unspecified

Type of Anatomic Structure

- (1) Whole Area
- (2) Vessels
- (3) Nerves
- (4) Organs (includes muscles/ligaments)
- (5) Skeletal (includes joints)
- (6) Head - LOC
- (8) Skin

Specific Anatomic Structures

- Whole Area
- (02) Skin - Abrasion
- (04) Skin - Contusion
- (06) Skin - Laceration
- (08) Skin - Avulsion
- (10) Amputation
- (20) Burn
- (30) Crush
- (40) Degloving
- (50) Injury - NFS
- (60) Trauma, other than mechanical

Head - LOC

- (02) Length of LOC
- (04, 06, 08) Level of Consciousness
- (10) Concussion

Spine

- (02) Cervical
- (04) Thoracic
- (06) Lumbar

Vessels, Nerves, Organs, Bones
Joints are assigned consecutive two digit numbers beginning with 02

Level of Injury

Specific injuries are assigned consecutive two-digit numbers beginning with 02.

To the extent possible, within the organizational framework of the AIS, 00 is assigned to an injury NFS as to severity or where only one injury is given in the dictionary for that anatomic structure. 99 is assigned to any injury NFS as to lesion or severity.

Abbreviated Injury Scale

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity

Aspect

- (1) Right
- (2) Left
- (3) Bilateral
- (4) Central
- (5) Anterior
- (6) Posterior
- (7) Superior
- (8) Inferior
- (9) Unknown
- (0) Whole region

VEHICLE #2

1986 Volkswagen Golf



OCCUPANT ASSESSMENT FORM

<p>1. Primary Sampling Unit Number _____</p> <p>2. Case Number - Stratum <u>93-07</u></p> <p>3. Vehicle Number <u>02</u></p> <p>4. Occupant Number <u>01</u></p> <p>OCCUPANT'S CHARACTERISTICS</p> <p>5. Occupant's Age <u>39</u> Code actual age at time of accident. (00) Less than one year old (specify by month): _____ (97) 97 years and older (99) Unknown</p> <p>6. Occupant's Sex <u>1</u> (1) Male (2) Female (9) Unknown</p> <p>7. Occupant's Height <u>188</u> Code actual height to the nearest centimeter. (999) Unknown <u>74</u> inches X 2.54 = <u>188</u> centimeters</p> <p>8. Occupant's Weight <u>079</u> Code actual weight to the nearest kilogram. (999) Unknown <u>175</u> pounds X .4536 = <u>079</u> kilograms</p> <p>9. Occupant's Role <u>1</u> (1) Driver (2) Passenger (9) Unknown</p>	<p>OCCUPANT'S SEATING</p> <p>10. Occupant's Seat Position <u>11</u> <i>Front Seat</i> (11) Left side (12) Middle (13) Right side (14) Other (specify): _____ (15) On or in the lap of another occupant</p> <p><i>Second Seat</i> (21) Left side (22) Middle (23) Right side (24) Other (specify): _____ (25) On or in the lap of another occupant</p> <p><i>Third Seat</i> (31) Left side (32) Middle (33) Right side (34) Other (specify): _____ (35) On or in the lap of another occupant</p> <p><i>Fourth Seat</i> (41) Left side (42) Middle (43) Right side (44) Other (specify): _____ (45) On or in the lap of another occupant</p> <p>(97) In or on unenclosed area (98) Other seat (specify): _____ (99) Unknown</p> <p>11. Occupant's Posture <u>0</u> (0) Normal posture</p> <p><i>Abnormal posture</i> (1) Kneeling or standing on seat (2) Lying on or across seat (3) Kneeling, standing or sitting in front of seat (4) Sitting sideways or turned to talk with another occupant or to look out a rear window (5) Sitting on a console (6) Lying back in a reclined seat position (7) Bracing with feet or hands on a surface in front of seat (8) Other abnormal posture (specify): _____ (9) Unknown</p>
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EJECTION/ENTRAPMENT

12. Ejection 0

- (0) No ejection
- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

13. Ejection Area 0

- (0) No ejection
- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear
- (7) Roof
- (8) Other area (e.g., back of pickup, etc.)
(specify): _____
- (9) Unknown

14. Ejection Medium 0

- (0) No ejection
- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify): _____
- (5) Integral structure
- (8) Other medium (specify): _____
- (9) Unknown

15. Medium Status (Immediately Prior To Impact) 0

- (0) No ejection
- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

16. Entrapment 0

(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)

- (0) Not entrapped
- (1) Entrapped
- (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability 4

- (0) None available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown

Integral Belt Partially Destroyed

- (6) Shoulder belt (lap belt destroyed/removed)
- (7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____

(9) Unknown _____

18. Manual (Active) Belt System Use 04

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): _____

(02) Shoulder belt _____

(03) Lap belt _____

(04) Lap and shoulder belt _____

(05) Belt used—type unknown _____

(08) Other belt used (specify): _____

(12) Shoulder belt used with child safety seat _____

(13) Lap belt used with child safety seat _____

(14) Lap and shoulder belt used with child safety seat _____

(15) Belt used with child safety seat—type unknown _____

(18) Other belt used with child safety seat (specify): _____

(99) Unknown if belt used _____

19. Proper Use of Manual (Active) Belts 1

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____

(8) Other improper use of manual belt system (specify): _____

(9) Unknown _____

20. Manual (Active) Belt Failure Modes During Accident 1

- (0) No manual belt used
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____

(6) Broken retractor _____

(7) Combination of above (specify): _____

(8) Other manual belt failure (specify): _____

(9) Unknown _____

21. Air Bag System Availability/Function 0

- (0) Not equipped/not available
- (1) Air bag

Non-functional

(2) Air bag disconnected (specify): _____

(3) Air bag not reinstalled _____

(9) Unknown _____

22. Air Bag System Deployment 0

- (0) Not equipped/not available
- (1) Air bag deployed during accident (as a result of impact)
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (9) Unknown

23. Are There Indications of Air Bag System Failure? 0

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____

(9) Unknown _____

Note: See Variables 44 through 48 (Page 5) for information on Automatic Belts

24. Police Reported Restraint Use 4

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): _____

(8) Restrained, type unknown _____

(9) Police indicated "unknown" _____

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant
at This Occupant Position 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): _____
- (9) Unknown

26. Seat Type (this Occupant Position) 01

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., column supported)
- (09) Other seat type (specify): _____
- (10) Box mounted seat (i.e., van type)
- (99) Unknown

27. Seat Performance (this Occupant Position) 1

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks or "seat back" failed
- (4) Seat track/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): _____
- (7) Combination of above (specify): _____
- (8) Other (specify): _____
- (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 0 0 0
 (000) No child safety seat
 Applicable codes are found in your NASS CDS
 Data Collection, Coding and Editing
 (950) Built-in child safety seat
 (997) Other make/model (specify):

(998) Unknown make/model
 (999) Unknown if child safety seat used

29. Type of Child Safety Seat 0
 (0) No child safety seat
 (1) Infant seat
 (2) Toddler seat
 (3) Convertible seat
 (4) Booster seat
 (7) Other type child safety seat (specify):
 (8) Unknown child safety seat type
 (9) Unknown if child safety seat used

30. Child Safety Seat Orientation 0 0
 (00) No child safety seat
Designed for Rear Facing for This Age/Weight
 (01) Rear facing
 (02) Forward facing
 (08) Other orientation (specify):

(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
 (11) Rear facing
 (12) Forward facing
 (18) Other orientation (specify):

(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
 (21) Rear facing
 (22) Forward facing
 (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 0 0

32. Child Safety Seat Shield Usage 0 0

33. Child Safety Seat Tether Usage 0 0

Note: Options below applicable to
 Variables OA31-OA33.

(00) No child safety seat

Not Designed With Harness/Shield/Tether

- (01) After market harness/shield/tether
 added, not used
 (02) After market harness/shield/tether used
 (03) Child safety seat used, but no after market
 harness/shield/tether added
 (09) Unknown if harness/shield/tether
 added or used

Designed With Harness/Shield/Tether

- (11) Harness/shield/tether not used
 (12) Harness/shield/tether used
 (19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether

- (21) Harness/shield/tether not used
 (22) Harness/shield/tether used
 (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES34. Injury Severity (Police Rating) 0

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

35. Treatment - Mortality 0

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease (specify):

Nonfatal

- (3) Hospitalization
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later
- (8) Treatment - other (specify):
- (9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 0

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):
- (9) Unknown

37. Hospital Stay 00

- (00) Not Hospitalized
- Code the number of days (up through 60) that the occupant stayed in hospital.
- (61) 61 days or more
- (99) Unknown

38. Working Days Lost 00

- Code the number of days (up through 60) that the occupant lost from work due to the accident
- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7**VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER**39. Time to Death 00

- Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 + n up through 30 days = 60)
- (00) Not fatal
- (96) Fatal - ruled disease
- (99) Unknown

40. 1st Medically Reported Cause of Death 0041. 2nd Medically Reported Cause of Death 0042. 3rd Medically Reported Cause of Death 00

- Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
- (00) Not fatal or no additional causes
- (97) Other result (includes fatal ruled disease) (specify):

(99) Unknown

43. Number of Recorded Injuries for This Occupant 00

- Code the actual number of injuries recorded for this occupant.
- (00) No recorded injuries
- (97) Injured, details unknown
- (99) Unknown if injured

AUTOMATIC BELT SYSTEM44. Automatic (Passive) Belt System Availability/Function 0

- (0) Not equipped/not available
 (1) 2 point automatic belts
 (2) 3 point automatic belts
 (3) Automatic belts - type unknown

Non-functional

- (4) Automatic belts destroyed or rendered inoperative
 (9) Unknown

45. Automatic (Passive) Belt System Use 0

- (0) Not equipped/not available/destroyed or rendered inoperative
 (1) Automatic belt in use
 (2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):
 (3) Automatic belt use unknown
 (9) Unknown

46. Automatic (Passive) Belt System Type 0

- (0) Not equipped/not available
 (1) Non-motorized system
 (2) Motorized system
 (9) Unknown

47. Proper Use of Automatic (Passive) Belt System 0

- (0) Not equipped/not available/not used
 (1) Automatic belt used properly
 (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly

- (3) Automatic shoulder belt worn under arm
 (4) Automatic shoulder belt worn behind back
 (5) Automatic belt worn around more than one person
 (6) Lap portion of automatic belt worn on abdomen
 (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):
 (8) Other improper use of automatic belt system (specify):
 (9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident 0

- (0) Not equipped/not available/not in use
 (1) No automatic belt failure(s)
 (2) Torn webbing (stretched webbing not included)
 (3) Broken buckle or latchplate
 (4) Upper anchorage separated
 (5) Other anchorage separated (specify):
 (6) Broken retractor
 (7) Combination of above (specify):
 (8) Other automatic belt failure (specify):
 (9) Unknown

49. Seat Orientation (this Occupant Position) L

- (0) Occupant not seated or no seat
 (1) Forward facing seat
 (2) Rear facing seat
 (3) Side facing seat (inward)
 (4) Side facing seat (outward)
 (8) Other (specify):
 (9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA50. Glasgow Coma Scale (GCS) Score 00
(at Medical Facility)

- (00) Not injured
 (01) Injured - not treated at medical facility
 (02) No GCS Score at medical facility
 (03-15) Code the actual value of the initial GCS Score recorded at medical facility.
 (97) Injured, details unknown
 (99) Unknown if injured

51. Was the Occupant Given Blood? L

- (1) No - blood not given
 (2) Yes - blood given (specify units):
 (9) Unknown if blood given

52. Arterial Blood Gases (ABG) - HCO₃ 00

- (00) Not injured
 (01) Injured, ABGs not measured or reported
 (02-50) Code the actual value of the HCO₃
 (96) ABGs reported, HCO₃ unknown
 (97) Injured, details unknown
 (99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION?

NO [] YES []

UPDATE CANDIDATE?

NO [] YES []



OCCUPANT INJURY FORM

1. Primary Sampling Unit Number _____

3. Vehicle Number 022. Case Number - Stratum 93-074. Occupant Number 01

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	Source of Injury Data	O.I.C.-A.I.S.						Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number
		Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect				
1st	5. <u>0</u>	6. <u>0</u>	7. <u>0</u>	8. <u>00</u>	9. <u>00</u>	10. <u>0</u>	11. <u>0</u>	12. <u>00</u>	13. <u>0</u>	14. <u>0</u>	15. <u>00</u>
2nd	16. _____	17. _____	18. _____	19. _____	20. _____	21. _____	22. _____	23. _____	24. _____	25. _____	26. _____
3rd	27. _____	28. _____	29. _____	30. _____	31. _____	32. _____	33. _____	34. _____	35. _____	36. _____	37. _____
4th	38. _____	39. _____	40. _____	41. _____	42. _____	43. _____	44. _____	45. _____	46. _____	47. _____	48. _____
5th	49. _____	50. _____	51. _____	52. _____	53. _____	54. _____	55. _____	56. _____	57. _____	58. _____	59. _____
6th	60. _____	61. _____	62. _____	63. _____	64. _____	65. _____	66. _____	67. _____	68. _____	69. _____	70. _____
7th	71. _____	72. _____	73. _____	74. _____	75. _____	76. _____	77. _____	78. _____	79. _____	80. _____	81. _____
8th	82. _____	83. _____	84. _____	85. _____	86. _____	87. _____	88. _____	89. _____	90. _____	91. _____	92. _____
9th	93. _____	94. _____	95. _____	96. _____	97. _____	98. _____	99. _____	100. _____	101. _____	102. _____	103. _____
10th	104. _____	105. _____	106. _____	107. _____	108. _____	109. _____	110. _____	111. _____	112. _____	113. _____	114. _____